TECHNOLOGY UL ARTMENT

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## PURCHASING

OCTOBER, 1947

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W. E. RIER: PERSONAL CONTACTS ARE IMPORTANT IN PURCHASING See Page 91 Pages 85-89 Table of Contents

A CONOVER-MAST PUBLICATION . 50 CENTS



THE GREATER efficiency and speed of modern metal cutting are made possible largely by petroleum products . . . the "liquid tools" that keep cutting tools cool, sharp and long-lived for finer faster machining.

finer, faster machining.

For many years, Texaco research has worked closely with designers, makers and users of machine tools... developing lubricants and coolants that enable each new, improved metal working machine to function at its fullest efficiency... increasing production... improving finish... lowering costs.

As a result, Texaco has a complete line of cut-

ting, soluble, grinding and hydraulic oils to meet every need...among them is a cost-saving, triple purpose oil for use on chuck-type automatics... an oil that serves as hydraulic fluid, machine lubricant and cutting oil.

A Texaco Lubrication Engineer specializing in cutting coolants will gladly assist you in the selection and proper use of the right cutting fluids to improve machining efficiency in your plant. Call the nearest of the more than 2500 Texaco distributing plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

VISIT TEXACO AT THE NATIONAL METAL EXPOSITION - International Amphitheatre, Chicago - Booth 2215 - October 18-24



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Century 60 horsepower open rated motor drives



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That Will Help to
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From Century's wide range of types and sizes you can select the right motor, properly protected to satisfy all popular requirements. You can be confident that the right Century motor on your equipment will provide a long life of satisfactory performance.

The unique construction of Century Splash Proof motors makes them safe to use wherever there are splashing liquids. The vital parts of the motor are kept dry even when the frame is washed with the full force of a hose

Century Explosion Proof motors protect life and property in hazardous atmospheres charged with explosive dusts or vapors.

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Century builds a complete line of fractional and integral horsepower electric motors in the popular sizes, to meet the requirements of industrial production, commercial and appliance needs.

Specify Century motors for all your electric power requirements.

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MORE SERVICE FROM RUBBER FOR INDUSTRY plant after plant, the nation over when power transmission requirements call for new belt installation, Republic Transmission Belting gets the job on pull. It's the record-length, troublefree pulling power of which Republic Belting has proved capable on industry's most difficult drives. Republic Transmission Belts are furnished in a diversified line that offers a specially adapted construction for each class of service. Whether the particular installation requires exceptional strength for heavy or shock loads, extra flexibility for high speeds and small pulleys, maximum stretchfree characteristics, or special prop-. erties such as resistance to oil, excessive moisture, fumes, etc.—there is a Republic Belt designed expressly for the conditions. This is the source of Republic Belting's pull...the source of power-hoarding, efficient perform-

ance that guarantees maximum belt economy.



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### Sure Footing ... WET or DRY!



WITH . . .

Even when wet, the angular projections of Inland 4-Way Floor Plate resist slipping and skidding. This superior safety steel flooring grips foot or wheel like a gear tooth, providing positive traction in all directions and preventing many a dangerous accident.

Liquids drain off freely from 4-Way Floor Plate, and it is easy to sweep and keep clean. There are no pockets in which water and dirt can collect. The pattern is the same in all directions, so that even small pieces can be matched to form a continuous pattern.

Use it for floors, steps, platforms, or catwalks in your plant, or on mobile and stationary equipment you manufacture. Furnished in three patterns and many thicknesses. Inland Steel Co., 38 S. Dearborn St., Chicago 3, Ill. Sales Offices: Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul.

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**INLAND 4-WAY FLOOR PLATE** 







"We Make Screw Machine Parts . . . . with 30% Production Increase"

CHARLES MARTI

Charles Marti, manufacturer of precision screw machine products, has combined screw machine techniques with Walker-Turner 15" Drill Presses with remarkable results.

"We have 58 Walker-Turner Drill Presses in our plant, all used in the manufacture of small screw machine parts ordinarily made on Swiss Automatics. These parts range in size from 1/32" to 3/8" in diameter, 3/4" to 5" long and are held within .002 limits.

"Each machine performs a single operation. All machines are equipped with special turning fixtures which are adjustable to any size; twelve installations have two heads mounted on each column and do the work of threading machines. All tools and bushings are submerged in oil.

"With this method, we showed a 30% increase in production in the manufacture of needles for lettering pens as compared with the former screw machine method. All work is done by unskilled operators.

"We intend to continue using this method because it assures flexibility of operation, and is particularly economical in making short runs. New jobs do not require sets of cams, only resetting of tools."

CHARLES MARTI, President
Charles Marti Precision Screw Machine Products
Newark, N. J.





Threading with Walker-Turner Drill Press

A a fi m w si a

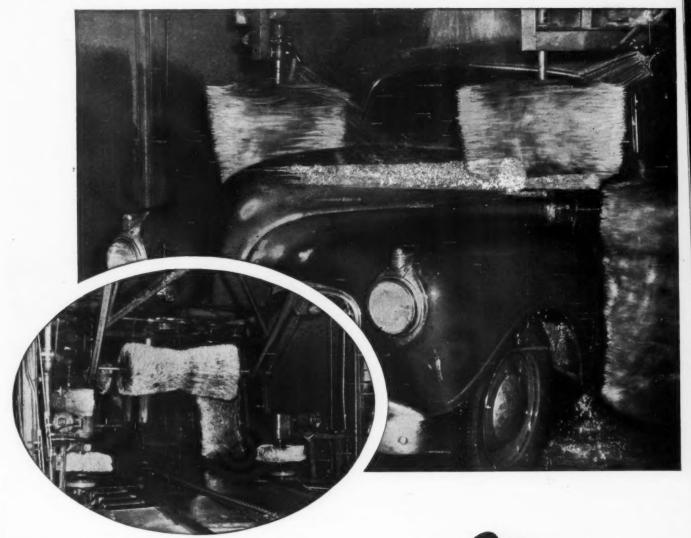
walker Turner

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MACHINE TOOLS

DRILL PRESSES - HAND AND POWER FEED . RADIAL DRILLS . RADIAL SAWS: METAL-CUTTING BAND SAWS . POLISHING LATHES . FLEXIBLE SHAFT MACHINES RADIAL CUT OFF MACHINES FOR METAL . MOTORS . BELT & DISC SURFACERS



## CARS GET BRUSH BATH IN 90 SECONDS

WILLIE'S idea of a fast bath and mom's conception of a thorough one are both combined in this new, semi-automatic car washing machine designed and built by Minit-Man, Inc., Detroit, Michigan.

The trick is done with brushes—not mirrors. Attached to a chain conveyor, the car moves through a section where seven Osborn Ringlock rotary fibre brushes, each 27 inches in diameter, do the major scrubbing job. Sides, hood, top, fenders, wheels and hub caps—all are sprayed and scrubbed simultaneously. Each brush is individually driven and may be adjusted for all widths of cars.

On emerging from the bath, car is dried by air under pressure while finishing touches are applied to front grille and back end. Actual washing time—45 seconds. Total elapsed time (including vacuuming of car interior)—90 seconds.

This same speed and efficiency of brushing is employed daily by industry to save dollars and improve products. Weld cleaning, removing burrs, finishing, roughing, polishing—all are jobs that the right brush will do better, cheaper.

#### THE OSBORN MANUFACTURING COMPANY

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Cleveland, Ohio



WORLD'S LARGEST MANUFACTURER OF BRUSHES FOR INDUSTRY



# INTERNATIONAL HARVESTER saved \$200,000.00 WIREBOUNDS

... \$200,000.00 saved through lower freight charges, reduced shipping damage costs, and more economical handling and storage made possible by Wirebound boxes and crates. Since starting to use Wirebounds eight years ago, company officials estimate that International Harvester has saved more than \$1,000,000.00 in shipping and container costs!

Each year, more than 300,000 Wirebound boxes and crates are used by the Harvester Company for shipping jobs such as these pictured here. Crankshafts, cylinder heads, complete gasoline engines, sheet metal parts and many other items are all shipped more economically and safely in Wirebounds.

Wherever used, Wirebounds can mean extra savings for you through shipping economies. Send the attached coupon for complete information on Wirebound containers. Or, even better, a Wirebound Sales Engineer will call to analyze your shipping problems completely and submit sample Wirebound boxes specially designed to ship your product more economically and safely.



SEND COMPLETE	SEND A SALE
NAME	POSITION
FIRM NAME	
ADDRESS	
aty	ZONE STATE
PRODUCT	



International Harvester Co. ships 75 pounds of tools in this Wirebound box with a tare weight of only 4.1/2 pounds!



Note compact arrangement of component parts in this Wirebound crate used for shipping cream separators. Note Rock Fastener loop closure.



This Wirebound box with a tare weight of 5 pounds is constructed to ship 150 to 200 pounds of small parts.



235 pound bull gear for an International Harvester tractor packed for shipment in a Wirebound box with Rock Fastener closure.



## announcing the New P&H

# Dial-lectric Control

#### Not Merely a New Model -But a Complete New Design

Here is the world's most advanced AC arc welder. A design so different, it eliminates all moving coils or cores worm gears, sprockets and chain or lever adjustments. Nothing to get out of order, nothing to wear. There isn't a single moving part that can bind or "freeze" from rust.

Exclusive P&H "Dial-lectric" control provides instant, accurate, finger-tip current selection. Only a three-quarter turn is required for continuous heat control from minimum to maximum capacity.

If you are now welding with AC - or plan to, you should investigate this really new machine . . . both designed and built by P&H for simpler, stronger, lower-cost welding.

#### DELIVERIES

now being made. See your P&H Distributor, or write for Bulletin W-72.



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#### ARNISCHFEGER

AMC WELDERS - EXCAVATORS - ELECTRIC CRAMES () MOTORS - HOISTS - WELDING ELECTRODES

#### FEATURES

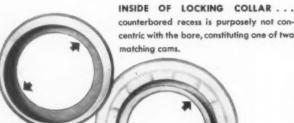
- Not a single moving part
- Easier, more accurate, creep-proof "Dial-lectric" control
- No plug-ins no cranks
- Instantaneous arc without auxiliary current boosters
- High-low welding range for general purpose or light gauge welding
  Extremely long service life
  Sturdily-built, smartly designed
  Wheel mounted for easy moving

- Removable dial for remote control
- N.E.M.A. rated

### DEMAND "built" this new 100,000 sq. ft. plant for the manufacture of FAFNIR Wide Inner Ring **Ball Bearing Transmission Units**

• It's as obvious as the simple principle of the Fafnir Wide Inner Ring Ball Bearing. Because no other ball bearing transmission unit is as simple and easy to install and remove, so many manufacturers wanted these units that Fafnir could not delay construction: a whole new plant had to be erected to satisfy the demand.



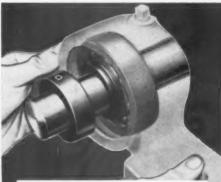


END OF WIDE INNER RING **BEARING** which projects through housing, machined as cam, matching cam of self locking collar.



#### DESIGN "built" the demand

Available in a complete line of transmission bearings . . . pillow blocks, hanger boxes, cartridges and fan boxes . . . of which the most popular for all around utility is the light type "LAK" Pillow Block. The Fafnir Bearing Co., New Britain, Conn.



NO MACHINING . . . The shaft is slipped ... not pressed or forced ... through the pillow block. Then the self-locking collar is slipped over the shaft onto the inner ring hub or cam,



NO ADAPTERS, NO LOCKNUTS . . . A quarter turn of the collar engages the recessed cam in the collar with the corresponding cam on the inner ring hub, locking the inner ring to the shaft.



DOUBLE LOCKED . . . As a final precaution, the set-screw is tightened, exerting a wedging action which holds the collar always in engaged position even under shock or reversing loads.

 Just as easily disengaged . . . by backing off the set-screw and turning the collar in the reverse direction to disengage the cams.

BALL BEARINGS



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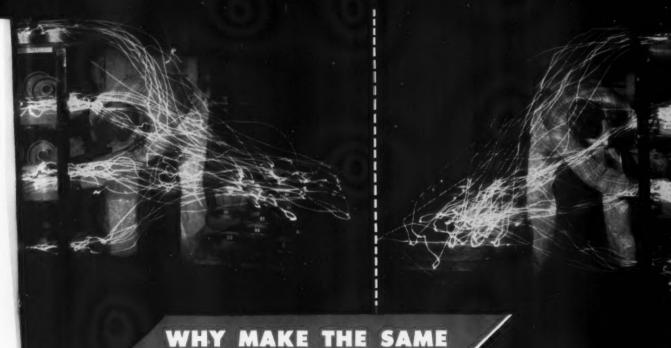
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MOST COMPLETE LINE IN AMERICA



MISTAKE TWICE?

WASTE REPEATED!

when they come out! Above, a light bulb on the worker's wrist shows the double waste of loading and unloading by hand!

Unloading is the first mistake . . . reloading is the second. And above you see an actual photographic record of the time and effort involved.

You can eliminate all this! Barrett Lifttrucks and Skids put an end to repeated piling and unpiling. Your loads stay on the skids . . . always ready to roll with a sweep of the lift-truck handle!

Together, Barrett Lift-trucks and Skids move materials so quickly and easily—from machine to machine, floor to floor, or in and out of storage—that one man with a Barrett can actually outwork 3 or 4!





WASTE ELIMINATED1

With Barrett Lift-trucks and Skids, the Skid stays with the load. One move frees the Lift-truck for other work. Again, one move picks up the stored materials—no reloading!



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A bookful of moneysaving ideas—yours for the asking. Write for your free copy of the Barrett Junior Catalog!

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Barrett Handling Equipment



HAND LIFT-TRUCKS



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BARREL TRUCKS





NIFTY SYSTEMS



## ONE of these 12 PERMITE ALUMINUM PAINTS

## A type for EVERY PURPOSE!

- ★ 1100 HEAT-RESISTING . . . for use on boiler and furnace doors, burners, ovens, pipes, stacks and other heated surfaces ranging from 450° to 1000° F.
- ★ 1600 WET SURFACE . . . provides enduring protection for wet, damp and moist surfaces in breweries, dairies, laundries, ice plants, paper mills, etc.
- ★ 2025 EQUIPMENT . . . for use on machinery and other interior and exterior equipment. Resists temperatures up to 450° F.
- ★ 2200 (Regular) and 2250 (Pre-Thinned) SPRAYING LACQUERS . . . synthetic nitrocellulose lacquers for product spray-finishing. Dry hard in 1 to 2 minutes.
- ★ 3050 AUTOMOTIVE . . . for spraying or dipping application on autos, trucks, tractors and buses. Withstands heat up to 1000° F.
- ★ 4000 QUICK DRYING . . . for fast-drying brush or spray application on products where lacquers cannot be used.
- ★ 5025 (Regular) and 5050 (Pre-Thinned) OUTDOOR
  . . . for industrial, commercial and farm building exteriors,
  bridges, gas and oil fanks, etc. Also excellent as priming
  coat for new lumber and new homes.
- ★ 6000 DIPPING . . . for dipping applications in industrial product finishing. Can be air-dried or baked.
- ★ 7025 GENERAL PURPOSE . . . a medium oil length type for all interior and exterior surfaces.
- ★ 7050 CHROME FINISH . . . a hard-drying, satin-smooth finish for interior use on woodwork, fixtures, appliances, walls, cupboards, piping, etc.
- ★ 8500 ROOF COATING . . . for use on bituminous roofing materials, such as asphalt or coal tar pitch built-up roofing, asphalt shingles or roll roofing, etc.
- ★ 9025 FUNGICIDE . . . a special paint formulation designed to inhibit growth of fungus and mold, and to resist attacks of termites and other boring insects.

ALSO 9500 PERMA-GOLD . . . a bronze-pigment gold paint for use on picture frames, electrical fixtures, metal railings, radiators, toys, etc.

## is Just Right for Your Job!

Every PERMITE Paint is a specialized paint. Since no one type of aluminum paint can give best results on all surfaces, PERMITE offers 12 distinct types . . . one for each particular kind of application, as briefly described at left.

And every PERMITE Paint is a superior quality paint . . . made of 99+% pure aluminum pigment combined with an exclusive, specially-processed vehicle. This special vehicle assures perfect multiple leafing . . . binds the metallic flakes into a hard, smooth, silver-bright coat, exceptionally resistant to rust and corrosion.

Then there's PERMITE economy! ALL PERMITE Paints are ready-mixed . . . ready to use. There's no waste or loss, and a big saving in time and labor.

For complete information on any or all PERMITE Ready-Mixed Aluminum Paints, see your nearest PERMITE Distributor or write us direct.

ALUMINUM INDUSTRIES, Inc.

The Originator of READY-MIXED Aluminum Paints



## No Other Fitting has this NO FLARE . NO WELD NO THREAD NO SOLDER BODY SLEEVE-Tube Inserted in Fitting Nut and Sleeve Snug NO CLOSING IN OF TUBE Nut Tightened In Place

## Exclusive Design

MORE and more Contractors and Manufacturers are learning to their profit, the benefits of Weatherhead Ermeto Fittings. They solve the mechanical problem of connecting tubing without the necessity of flaring, threading, welding or soldering. This is truly a timesaving fitting.

Connections are quickly made which will, in most instances, hold beyond the burst strength of the tube itself and withstand excessive vibration without loosening the joint.

There is a size and type of Ermeto fitting for practically every application. Can be furnished in O. D. tube sizes from 1/8" to 2" inclusive. Special sizes are available to meet your individual requirements.

Look Ahead with

### Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND 8, OHIO

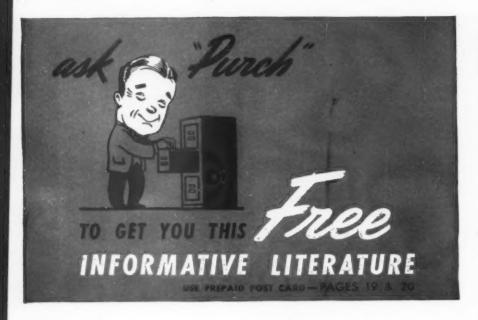


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#### FREE!

Write today for the fully illustrated Ermeto Catalog and learn how Weatherhead Ermeto fittings can provide dependable connections for hydraulic, air, water or oil lines.

Your nearest Weatherhead office will be glad to consult with you and provide any technical literature.



- ☐ 1. LETTERHEADS—Sample book carries samples of the new Hammermill Cockletone bond—a sturdy "heavy feel", crisp paper especially fitted for letterheads and envelopes. Hammermill Paper Co.
- ☐ 2. WIRE MARKER LABELS—Sample of Quik-Label Wire Markers and bulletin giving complete information about Quik-Label Code Card with self-starter strip are available from W. H. Brady Co. Cards conform to NEMA and ASA specifications; color codes are stocked in 15 solid colors.
- ☐ 3. SCREW DRIVER—Circular describes the Slick 3-11 screw driver, a precision instrument with automatic holder and aligner. Driver has inverted and flexible bits which hold and start screws with ease. Eslick Products Inc.
- ☐ 4. SOAP SAMPLES—Sample quantities of Treet and Commodore cleansers are available from the Lightfoot Schultz Co. Former is a fine grind soap for heavy du'y, and the latter a coarse grind soap for extra heavy duty.
- □ 5. GRINDING WHEELS—Series of booklets on the operation of grinding wheels and grinding machines, the first of which is entitled "Portable Grinding Machines, Safe and Efficient Operation", will be sent to you by The Grinding Wheel Manufacturers Association.
- ☐ 6. BRASS DIE CASTINGS—Bulletins illustrate "Outstanding Achievements with Brass Die Castings", "Brastil" die castings are said to have the strength of steel and the wear and corrosion resistance of high grade bronze. Doehler-Jarvis Corporation.
- ☐ 7. ODORLESS DEODORIZER—Generous sample of O.D. 30, all purpose odorless deodorizer, which is characterized as being easy to use, economical, and absolutely harmless, will be sent to you by Wonder Wash Corp.

- ☐ 8. STAINLESS STEEL—Three booklets tell about the use of stainless steel in the Meat Packing industry, the Petroleum industry, and the Dairy industry. Each covers specific applications, performance records, etc., and includes information about physical properties, fabricating procedures and forms of Allegheny Stainless Steel available. Joseph T. Ryerson & Son, Inc.
- ☐ 9. EATON PRODUCTS—Truck axles, engine valves, valve seat inserts, rotor pumps, coil and leaf springs, spring washers, snap rings, cold drawn steel, gray iron castings, stampings, dynamometers, vehicle fan drives, car and truck heaters, etc., are covered by 1947 booklet issued by Eaton Manufacturing Co.
- ☐ 10. SHELVING—Bulletin describes the Hines shelf units which are made in one basic size, 3' wide, 3' high and 11½' deep, and come carton packed. Regular units can be mounted to make shelving 6, 9, or 12 ft. high; and extension units permit building free standing shelves of any length. Edward Hines Lumber Co.
- ☐ 11. DOCKBOARDS Magnesium oneman dockboards designed to fit any job, and made to fit any railroad car or truck loading operation, are described in new bulletin. They weigh ¼th as much as steel. Magnesium Co. of America.
- [] 12. WATER ANALYSIS—Bulletin No. 11, third edition, 1947, "Water Analysis—Methods of Analyzing Water for Municipal and Industrial Use", is now available from the Solvay Sales Corporation.
- 13. BOLTS, NUTS, STUDS—Catalog No. 46 that offers a convenient means for selecting brass, bronze, silicon bronze, stainless steel and monel metal bolts, nuts, washers and screws has just been issued by the Pawtucket Mfg. Co.
- ☐ 14. MERCURY LAMPS "Mercury

Lamps in Industry", booklet Y-729 tells the story of Mercury lamps as a production tool. Among advantages listed are low light cost, need for fewer lamps, reduced maintenance, and good blending light. Lamp Department, General Electric Co.

- ☐ 15. COOLERS—New bulletins describe Junior Unit Coolers for walk-in coolers, dual purpose unit coolers with water defrosting, standard unit cooler, high humidity unit cooler for vegetable storage room, fur storage vault, etc., and storage room ccolers. McQuay, Inc.
- ☐ 16. PLASTICS—DuPont Plastics is title of latest booklet issued by Plastics Department of E. I. duPont de Nemours & Co. It describes Lucite, Polythene, Nylon, Strux cellular cellulose acetate plastic, Butacite, Plastacele, Pyralin, and the new Teflon which is proving its worth in gaskets and packings.
- ☐ 17. VALVES—Foot operated valves, hand operated valves, and speed control valves, are the subject of Bulletin 235 issued by Hanna Engineering Works.
- ☐ 18. NICKEL ALLOYED Cast Irons—Ni-Resist section describes engineering properties and applications of Ni-Resist cast nickel alloy. Corrosion data for 400 corrosive media are presented in tabular form. The International Nickel Co-
- ☐ 19. TAPPING MACHINES—Two-color booklet describes Universal Tapping machines. Large illustrations and phantom drawings show all the details. A new foot operating mechanism is also described. Procunier Safety Chuck Co.
- ☐ 20. ELECTROSTATIC SPRAY PAINT-ING—Process which it is said has enabled manufacturers to reduce paint and labor costs by 40 to 60 percent, is described in 16-page book which illustrates some 25 typical electrostatic spray installations with brief case histories of many of them-Harper J. Ransburg Co.
- ☐ 21. MATERIAL HANDLING—"14 of the 101 Ways to Cash In on the Clark Trucloader" is subject of booklet describing versatility of Clark 1000-lb. fork-lift truck for handling a wide variety of lift-haul chores common to most industrial plants. Clark Tructractor Division.
- ☐ 22. DIFFUSION TUBE—Air diffusion tube for use in the activated sludge process of sewage treatment and in air diffusion and gas mixing for the chemical process industries, is subject of bulletin No. 177 released by Chicago Pump Co. The tube is of corrugated stainless steel, wound with Saran plastic cord, and is said to be 60% lighter than previous diffusion media. It is exceptionally strong.
- ☐ 23. METAL FABRICATION—Bulletin describes facilities for handling primary or sub-contract work in fabricating almost any metal part or product. Operations cover all types of work including forming, bending, punching, machining, welding, etc. done by this Pennsylvania company. Phillips Mine & Mill Supply Co.
- ☐ 24. V-BELTS—Catalog leaflet on its light duty V-Belts has just been published by the B. F. Goodrich Co. It describes product, lists publications which assist in selecting the right belts and carries a page of tables on standard stock sizes.

(Please turn to page 16)

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(Continued from page 14)

- 25. GRAVITY CONVEYORS—Catalog contains descriptions, photographs and specifications of entire line of gravity conveyors made by the Rapids-Standard Co., Inc. It details the company's wheel and roller gravity conveyors and includes α complete listing of all accessories.
- ☐ 26. LIQUID LEVEL INDICATORS—Bulletin WG 1822 describes the Yarway remote liquid level indicators for boilers, heaters, storage tanks and other vessels in power and industrial process plants. New units described are control unit and its attachments and compensator. Yarnall-Waring Co.
- ☐ 27. BRONZE—Catalog 46 covers standard bronze bearings, bronze bars and bronze electric motor bearings. It includes complete listing of new bar sizes, new standard stock size, and by text and drawings describes special bearings; also, engineering data. Bunting Brass & Bronze Co.
- ☐ 28. INDUSTRIAL HARDWARE—Catalog No. 140, Drop Forged Industrial and Marine Hardware for mines, oil fields, quarries, ship yards, industrial plants, railroads, utilities, etc., has just been released by the Thomas Laughlin Co. Details of working characteristics of each product remove guesswork in selecting the proper fitting.
- ☐ 29. UNIVERSAL JOINTS—Mechanics Roller Bearing Universal Joints is brand new catalog, No. G1-46, just released by Mechanics Universal Joint Division, Borg-Warner Corp. Contents include roller bearing universal joints for farm and industrial machines, rollers and propeller shafts for farm machines, and aircraft and automotive joints.
- ☐ 30. STIFFNESS TESTER—Bulletin 1440 contains complete details of new motoroperated stiffness tester, designed for rapid, consistent and accurate tests on light metals, foil, paper, plastics, textiles, leather, hard rubber, fibre products and other thin flexible sheet materials. Capacity ranges from light tissue or thin cloth up to heaviest sheet boxboards in common use. W. & L. E. Gurley.
- ☐ 31. CLEANSER—Sample of O.D. Wonder Wash which maker states is better than soap and better than alkali cleansers, will be sent to you by Wonder Wash Corporation. It can be used in soft or hard, hot or cold water.

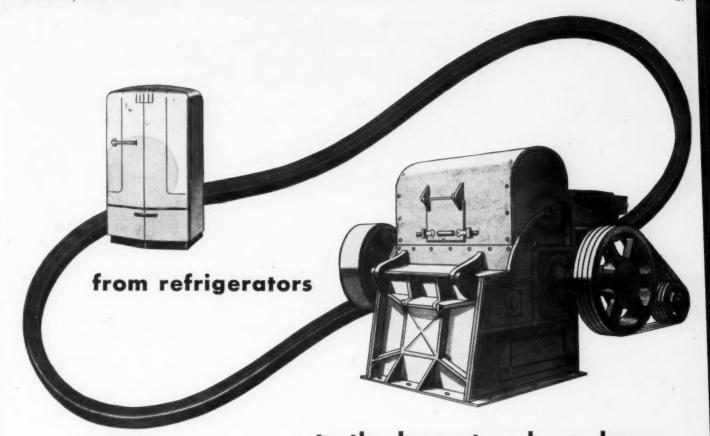
- ☐ 32. HUMIDITY CONTROL—Bulletin describes the Kathabar system of humidity control. Chart shows various temperature-humidity conditions available from the system. Illustrations show food dehydrating, capsulating, dry blast for foundry cupolas, drying leather, etc., etc. Surface Combustion Corp.
- □ 33. DRILLING UNITS—Bulletin describes the Electro-Mechano automatic drilling unit which combines a hydro-checked air motor with α speed-right drill head for faster small hole production. Any speed within the ranges of 1000 to 10,000 or 2500 to 15,000 is instantly available. With 50 psi line pressure time for 1" travel is said to be variable from .8 seconds to 35 seconds. The Electro-Mechano Co.
- 34. COATING & LINING—Protective coating and lining for steel and other metals known as Lithcote is described in brochure issued by Lithgow Corp. Lithcote baked-on synthetic resin coatings and linings are said to have remarkable staying qualities against acids, solvents, brines, alcohols, fats, oils, syrups, petroleum, etc.
- ☐ 35. WATERPROOFING—Booklet describes process of waterproofing walls from the inside against hydrostatic pressure, which is said to make leaky basements, pits, dams, cellars, etc., bone dry. Ranetite Mfg. Co.
- ☐ 36. EXPANSION JOINTS—Bulletin EJ47 describes free-flexing, and controlled-flexing bellows type expansion joints for controlling expansion, vibration, and misalignment in pipe lines having pressures to 300 psi and temperatures to 900° F. Designs with copper and stainless steel corrugations are illustrated. Sizes range from 4" to 24" inside dia. Chicago Metal Hose Corp.
- ☐ 37. MOUNTED WHEELS, POINTS—Norton mounted wheels and mounted points are illustrated in new catalog which shows standard shapes and sizes, and also gives ordering information. Norton Company.
- ☐ 38. INTERCOMMUNICATION SYSTEMS
  —Bulletin illustrates and gives detailed information about Talk-A-Phone standard, special de luxe, de luxe, chief, and extra power and special combination intercommunication systems. Talk-A-Phone Co.
- ☐ **39. DISCOUNT CALCULATOR**—Of interest to buyers of bolts, nuts and screws is Discount Calculator, including both base

and supplemental chain discounts, made of heavy cardboard and operating on a slide rule principle. It also includes base discounts from 0% to 90% in  $\frac{1}{2}$ °. The calculator is being distributed by Sterling Bolt Co.

- ☐ 40. STAMPINGS—Booklet shows specimens of stampings and assemblies currently produced for industrial and civilian goods manufacturers, such as motor parts, scale parts, oil pans, axle housings, furnace parts, stools, journal box covers, etc. It also lists other services such as press work, die-making, assembling, heat treating and pickling and finishing. Crosby Co.
- ☐ 41. MATERIAL HANDLING—Bulletin describes Unitized portable power conveyor system featuring combination power unit and piling conveyor; also, accordion gravity conveyors. Food Machinery Corp.
- ☐ 42. GASKETS—Catalog of 64 pages illustrates gaskets and gasket materials, and covers every type of gasket service to meet industrial and scientific needs. It contains full specifications, sizes, useful engineering data and a simplified selector chart to aid in selection of proper gasket for every purpose. Melrath Supply & Gasket Co., Inc.
- ☐ 43. STANDARD STEELS—Frasse data chart shows up-to-date analyses specifications for all standard steels; gives AISI numbers, analyses of each steel and corresponding SAE and AMS numbers. Peter A. Frasse & Co., Inc.
- ☐ 44. PUMPS—Pump catalog gives detailed specifications on Brown & Sharpe Mfg. Company's complete line of rotary, geared, vane, centrifugal and motor driven pumps.
- ☐ 45. OFFICE OFFSET Duplicating Plates—Plastic offset duplicating plate makes typing as easy as typing a letter, allows use of the ideal sharp clean-cut ribbon whether carbon, paper or cloth, makes for easy corrections and can be inserted in paper basket of Vari-typer. It is said to make for higher quality work, longer runs, lower plate costs, and copy can be changed in re-runs. Bulletin describes it in detail. Remington-Rand Duplicator Supplies Divn.
- ☐ 46. PERMANENT MAGNET Separators—Bulletin M-3 describes Triple Air Gap and Single Air Gap magnetic separators for spouts and chutes and portable magnetic separators for conveyor belts and picking tables. They are available in wide range of sizes. The Bauer Bros. Co.
- ☐ 47. GRINDING MACHINERY & WHEELS
  —Catalog 147 illustrates and describes grinding machinery and grinding wheels—horizontal face grinders, vertical surface grinders, knife grinders, floor stand grinders, buffing lathes, etc. The Bridgeport Safety Emery Wheel Co., Inc.
- ☐ 48. MILL GAGES—Electrolimit Mill Gages, Bulletin No. 489, is new release by Pratt & Whitney, Division Niles-Bement-Pond Co. Types and services of various types are illustrated and described.
- ☐ 49. AUTOMOTIVE GENERATORS—Bulletin describes new a-c Generating System known as the Alternator which supplies 25 to 35 amperes at idle of most engines, made by The Leece-Neville Co.

(Please turn to page 19)

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Manufacturers of new equipment are invited to correspond direct with the home office.



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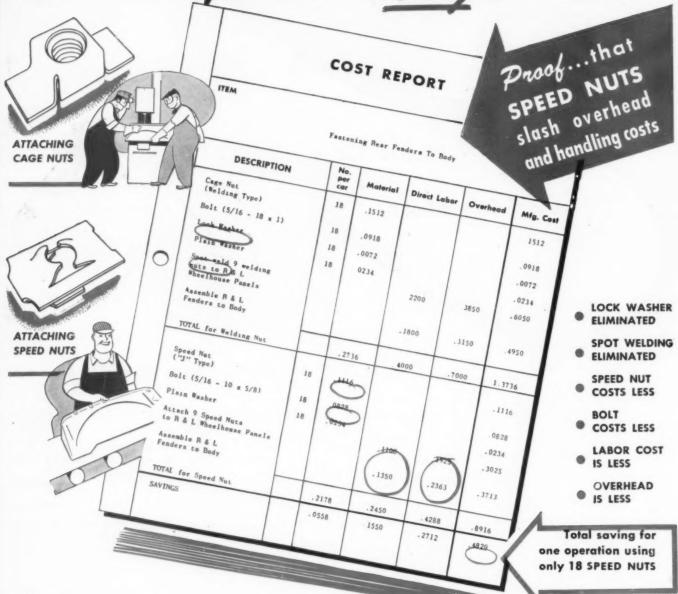
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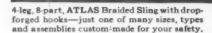




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Rigging up loads for connection to crane hooks is a hazardous business. Only slings with adequate safety factors are good enough for safe handling in your plant. For your safety, breaking strengths and safe loads at various angles of use are listed for each size of Macwhyte ATLAS Sling, and published in Macwhyte Sling Catalog S-7.

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These two ropes -)
are left lay,
but in the sling
they are braided
to the right.

This patented ATLAS construction makes possible
an extremely flexible and
kink-resistant sling that is
exceptionally easy to handle.
All ropes follow a continuous
spiral path throughout the
entire body length in such
a way as to provide great
reserve strength protection,
and maximum safety.

-These two ropes are right lay, but in the sling they are braided to the left.

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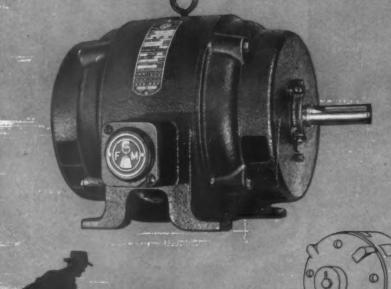
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Motors all alike?

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MEN who have studied electric motors... tried them out on varied jobs, compared cost records and performance records... these men *know* that motors are *not* all alike, despite identical mounting dimensions and ratings.

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Diesel Locomotives • Diesel Engines • Generators • Motors Pumps • Scales • Magnetos • Stokers • Railroad Motor Cars and Standpipes • Farm Equipment They know, for instance, that Fairbanks-Morse motors consistently demonstrate superior stamina where the going is tough. That's largely because of an exclusive combination of features which includes indestructible Copperspun rotors, prewound stators with long-lived insulation, ball bearings, crossflow ventilation that bans hot spots, and complete protection against falling objects and dripping liquids, regardless of mounting position.

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silent chain combines long-life, highest efficiency and lowest over-all cost. It runs slack on short centers, with least bearing pressure, yet slip is impossible. Unaffected by temperature, oil or mois-

ture; can not deteriorate during idle periods. Data Book 125 is packed with helpful facts and application suggestions—Send for your copy.

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Link-Belt Silverlink roller chain is applicable to the widest range of power transmission problems. Great Strength in relation to weight, stamina to withstand shock loads, smooth, positive and flexible operation are outstanding advantages of this versatile medium. Motion in either direction, without slip or creep, can be given any number of shafts. Single or multiple widths, from 3/8 inch to 2 inch pitch, fully described with valuable application data, in Book 1957.

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Supply the mechanical advantages of chain power transmission to heaviest-duty, slow and medium speed applications. Link-Belt steel, malleable iron and Promal chains provide the strength, stamina and corrosion resistance to meet the severest

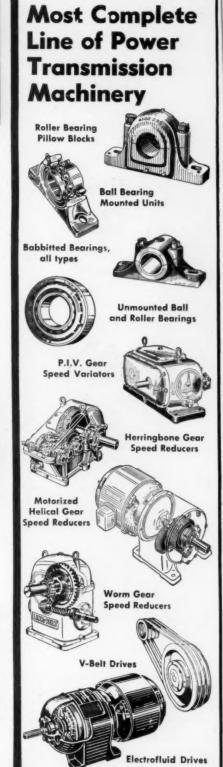
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A Link-Belt power transmission engineer has no one's ax to grind-except his customer's. Not confined by a limited line—he can recommend the type of speed reducer -the type of bearing-the type of chain drive-the exact power transmission units best suited to his customer's needs. Link-Belt engineering advice on your power transmission problems is completely unbiased. There is no reason for it to be otherwise.









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H & D "firsts" in many other industries have also been effecting similar savings — in packaging time, in lower distribution costs. The Hinde & Dauch Paper Co., 4708 Decatur St., Sandusky, Ohio.

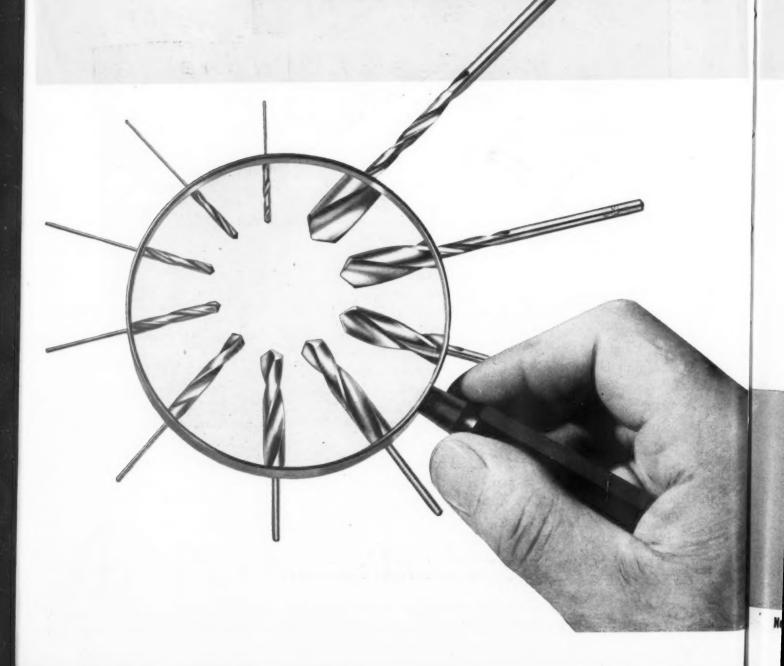


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## HINDE & DAUCH · Authority on Packaging

FACTORIES IN: Baltimore 13, Maryland • Buffalo 6, N. Y. • Chicago 32, Illinois • Cleveland 2, Ohio • Detroit 27, Michigan • Gloucester, N. J. • Hoboken, N. J. Kansas City 19, Kansas • Lenoir, N. C. • Montreal, Quebec • Richmond 12, Virginia • St. Louis 15, Missouri • Sandusky, Ohio • Toronto, Ontario • Boston, Mass

Magnifying Glass Shows Clue to Lower Costs with Small Drills!





#### Morse "Multi-Inspection-Test-Control"

## Provides Peak <u>Small Drill</u> Quality for ACCURATE Hole Size

We've placed these little fellows under the magnifying glass for a better look. Morse checks and tests and checks again, at every step of the manufacturing process. When a drill has been okayed by the Morse multi-inspection system, the user is certain of a small drill made to the closest tolerances—a tool that's dimensionally accurate with just the right degree of hardness and toughness—a drill that's scientifically ground and precision pointed.

Remember too, Morse small drills are double-drawn for increased toughness while

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Whether your needs call for "bantam" size drills or the big Morse "block busters," Morse has the tool to cut down your costs. Your Industrial Supply Distributor can aid you in obtaining the proper Morse recommendation for your job on small or large drills and other high quality cutting tools.

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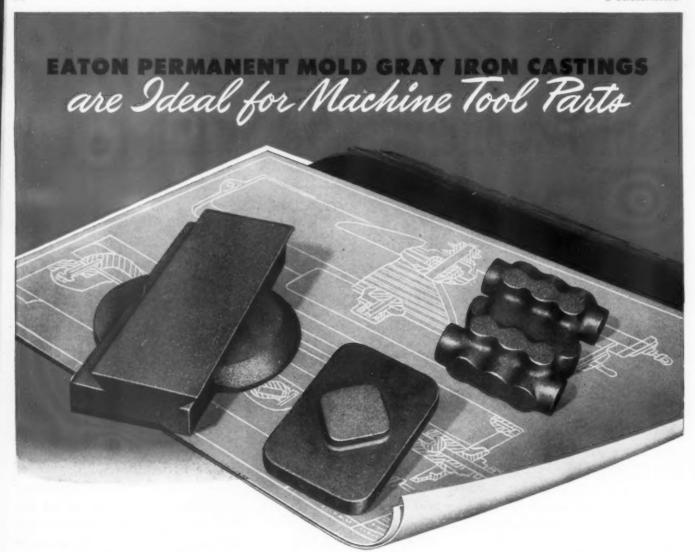
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For a wide range of applications in the machine tool industry Eaton Permanent Mold Gray Iron Castings provide an ideal combination of physical characteristics. High tensile strength and ability to withstand shock are naturally prime requirements. Their dense non-porous structure, assuring freedom from leakage, recommends them particularly for hydraulic control and equipment parts. Face plates, vee-blocks, and other precise units can be lapped flat with assurance that they will not warp or distort after machining.

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Eaton Foundry Division engineers will be glad to discuss the application of Eaton Permanent Mold Gray Iron Castings to your product.

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**32** ALUNDUM abrasive has made good on every one of the Hollywood adjectives used to describe it a year ago. In plant after plant 32 ALUNDUM grinding wheels really are proving sensational — really do cut costs because they:

grind cooler
grind faster
last longer
require fewer dressings

32 ALUNDUM abrasive is entirely different from any other abrasive — made differently by a Norton-invented and patented process. There's no crushing to size.

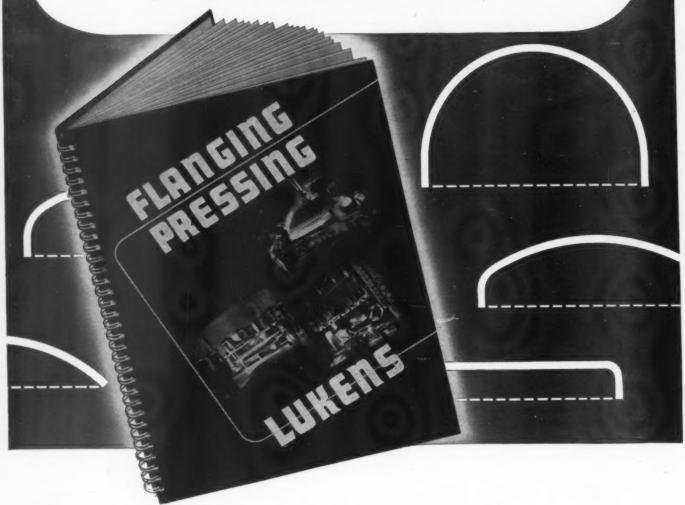
32 ALUNDUM wheels are available in all standard sizes. They can cut costs for you on cylindrical, centerless, surface, tool and internal grinding.

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For boilers, tanks, pressure vessels and other equipment using spun or pressed heads—choose heads of standard size and shape from this engineering design data book. You'll save time and money. Of course, where special heads are necessary, Lukens can supply them, too.

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The STARRETT reputation for quality and accuracy also applies to hacksaws and band saws. Saws made by the "World's Greatest Toolmakers" can be counted upon to equal or exceed the performance of other brands, saw for saw and job for job. And the STARRETT line is truly complete — including hacksaws in all sizes and types for hand and power metal cutting and band saws for cutting ferrous

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HACKSAWS . BAND SAWS FOR CUTTING METAL, WOOD, PLASTICS





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Whether your product is fragile as a television tube or weighty as an air-conditioning cabinet, you can trust KIMPAK\* creped wadding to safeguard its trip to market.

For KIMPAK is a compact, resilient cushion that's soft and grit-free — feather-light. It's strong and flexible made either liquid absorbent or liquid repellent. And it is shock-absorbent — babies your product from shipping room to destination. KIMPAK is available in a variety of types, thicknesses, and backings to suit your particular interior cushioning need. In fact, there is a specification of KIMPAK to meet every re-

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Discover for yourself how efficiently — and economically — soft, clean KIMPAK can work for you. Call or write your local distributor, who is listed in the Red Book under Wadding, Shipping Room Supplies, or Packaging Materials. Ask him for a copy of the free KIMPAK book on better ways to package your product. Or, you may write directly to Kimberly-Clark Corporation, Creped Wadding Division, Neenah, Wis.

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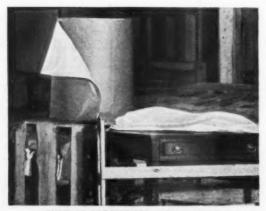
FLOTATION PACKAGING — Television Tube
Photo Courtesy Farnsworth Television & Radio Corp.



BLOCKING AND BRACING — Air-Conditioner Cabinet
Photo Courtesy York Corp.



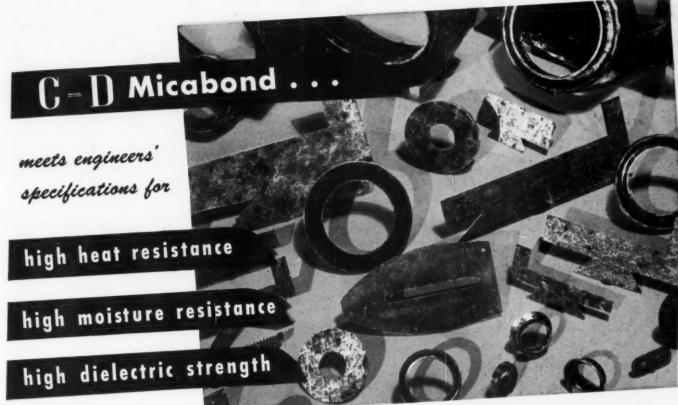
ABSORBENT PACKAGING — Chemical Set Photo Courtesy Lionel Corp.



SURFACE PROTECTION — Serving Table Photo Courtesy Coleman Furniture Co.



CREPED WADDING



When you are called upon to purchase electrical insulation that will withstand heat—that is little affected by moisture—and that will provide excellent dielectric properties —buy C-D Micabond.

Micabond combines the heat resistance, moisture resistance and electrical insulating properties of raw mica into easy-to-use sheet, tube and tape form. Micabond sheet is easily punched and formed for commutator segments and rings, heating element insulators, terminal washers and similar applications. Micabond tube is ideal for many applications such as resistance coils and insulating bushings. Micabond tape is used extensively as a highly efficient insulating wrapping for coils.

C-D Micabond is made in 23 standard types and grades -one or more of which is sure to give you the specific insulating properties required to meet the specifications of your engineers. For complete information on C-D Micabond, write for our latest Micabond bulletin or ask us to have an engineer help you with your problem.

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#### DIAMOND VULCANIZED FIBRE

VULCOID—Resin Impregnated Vulcanized Fibre.

DILECTO—Thermosetting Laminated Plas-

CELORON-A Molded Phenolic Plastic. MICABOND-Built-up Mica Electrical Ingulation.

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Available in Standard Sheets, Rods and Tubes; and Parts Fabricated, Formed or Molded to Specifications.

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## Only MO-MAX GIVES YOU ALL THESE ADVANTAGES

- 1. MO-MAX has superior cutting qualities.
- 2. The machinability of MO-MAX is unexcelled.
- 3. MO-MAX is economical. Its specific gravity is about 8% less than that of 18% tungsten steel.
- 4. MO-MAX is available in a standardized composition; also in cobalt and high vanadium varieties for special high speed steel requirements.
- 5. For 14 years MO-MAX has demonstrated its superiority in all types of cutting tools.

Learn all the facts! Send for your copy of the MO-MAX Handbook, sixth edition. Get the full story about this remarkable steel, including easy-to-follow instructions on heat treating.

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"MONICAN" Atlas Steels Limited
"BETHLEHEM HM" Bethlohem Steel Company
"MO-CUT" Braeburn Alley Steel Corporation
"STAR MAX" Carporter Steel Company
"MOLITE M-1" Columbia Tool Steel Company
"REX T-MO" Crucible Steel Company of America
"DI-MOL" Henry Dissten & Soos, Inc.
"HI-MO" Firth-Sterling Steel Company
"REX T-MO" Hulcomb Steel Company
"WO-MOGUL" Jessep Steel Company
"MOGUL" Jessep Steel Company
"MOMAX" The Midvale Company
"S. T. M." Simonds Saw & Steel Campany
"MO-TUNG" Universal-Cycleps Steel Corporation
"B-N-2" Vanedium-Alleys Steel Company
"YUL-MO" Yalcon Crecible Steel Campany



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COLUMBIA STEEL COMPANY

San Francisco

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- ... Searing heat scars, injures metal surfaces. Production slows.
- ... Glue on belt softens; abrasive is wiped off. Cloth backing is weakened by intense surface heat. Belt replacement is soon required.

SILVER STREAK metal working belts are insulated - stand up under terrific grinding temperatures. Result: -

- . . . Greater production speeds.
- . . . Belt replacements are sometimes cut as much as 400%.

SILVER STREAK and JEWELOX (aluminum oxide) belts are finished by AP's exclusive Velvet Joint process. They lie smooth, never bump or jump under the work. Try one of these famous belts . . . see for yourself. Phone your jobber or write to Abrasive Products, Inc., 523 Pearl St., South Braintree, Mass.



# NATIONAL ELECTRIC IPI\* BUS Saves You Money: \*Industrial Plug-In Bus for Electrical Distribution

This man is reaching overhead to plug-in additional production machinery to the electrical distribution system. Below him all the other machines in the line continue running. Because his plant has N.E. Industrial Plug-In Bus, motorized equipment can be added or removed any time without shutting down the production line! The Plug-In device he is holding was connected to the machine before being brought into position.

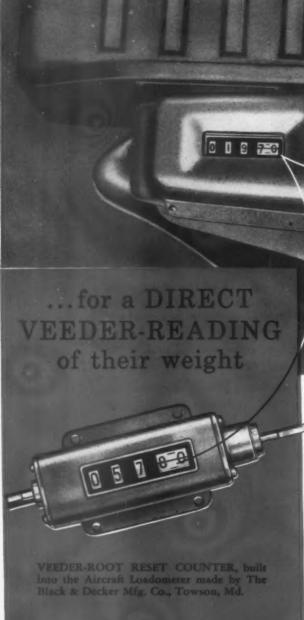
Besides permitting production to roll ahead while this man changes equipment, IPI Bus saves you money in other ways:

- Eliminates the necessity of distribution panelboards.
- Every foot of the distribution system is usable—machines can be plugged in anywhere along the busway.
- It is self-contained and 100% salvageable.

Let us assist you in determining how this efficient distribution system can best be installed to meet your requirements. Call our nearest sales office, or write for IPI Bus literature today. National Electric Products Corporation, Pittsburgh 30, Pa.



Now...Aircraft
"Step Right Onto
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To determine the weight and balance of any aircraft . . . tiny flying boat or giant transport . . . here's all there is to do:

Run each plane wheel up the ramp and onto the platform of the convenient portable Aircraft Loadometer. As simply as that, this accurate Black & Decker device gives an instant reading of the plane's weight.

In the Loadometer, the system of weighing levers is pivoted to a calibrated spring. This spring is extended by a micrometer screw geared to a Veeder-Root Reset Counter which gives an instant and direct Veeder-Reading of the plane's weight in pounds or kilograms.

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In selecting a counting device for the Aircraft Loadometer, Black & Decker chose this Veeder-Root Reset Counter because it provides a positive reading, because the reading remains after the load is removed from the platform, and because the device is easily reset to balance at zero after each weighing. The Veeder-Root counter also provides an accurate minimum reading of five pounds and upward to the maximum capacity of 20,000 pounds.

Here again is proof that Veeder-Root not only "Counts Everything on Earth"—but also many things that fly above it. And standard or special Veeder-Root Devices, built into your product, can count to your advantage in more ways than you could ever figure out, alone. So talk it over with a Counting House engineer. Just write and say when you want him to call.

#### VEEDER-ROOT INC.

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In Canada: Veeder-Root of Canada, Ltd., 955 St. James St., Montreal 3.
In England: Veeder-Root Ltd., Dickinson Works, 20 Purley Way, Croydon, Surrey.



#### THIS WAS "WORKING" FOR THE RAILROAD IN 1884

Air-conditioning is generally regarded as an ultra-modern innovation. Actually the railroads began the ice-cooling of passenger cars 63 years 2go. This was continued to some extent until 1930, when the first electrical-mechanical air-conditioning units were put into regular railroad service. Thus to a large extent the railroads may be credited with pioneering the introduction of this great comfort to man. Today, more than 13,000 passenger cars are air-conditioned. And in the air-conditioning and car-lighting units of a large

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percentage of these cars, Exide-Ironclad Batteries are used.

Whatever the need, there is an Exide Battery of the right size, capacity and construction. Exide Batteries furnish safe, dependable power for time-saving battery electric trucks and mine haulage units...for tele-

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BATTERIES

phone, telegraph, railroad and radio equipment... for aircraft, Diesel engine cranking, emergency lighting and numerous other uses. And on millions of cars and trucks they continue to prove that "When it's an Exide, you start."

For 59 years, the name Exide has stood for dependability, economy, safety and long life. Information regarding the applications of storage batteries for any business or industrial use is available upon request.

THE ELECTRIC STORAGE BATTERY CO.

Philadelphia 32

Exide Batteries of Canada, Limited, Toronto



Whether auto-race driving or screw-driving — you waste time and speed when you have to change drivers! When you use the Reed & Prince ONE DRIVER method, you do not need to change drivers for varying screw sizes. There is no fumbling, no shifting, no wasting time. Remember, ONE Reed & Prince driver fits ALL Reed & Prince recessed-head screws and bolts. Good workmen appreciate this fast, modern, efficient method — and it shows up to advantage on your time sheet.

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MANUFACTURING CO. CHICAGO, ILL. WORCESTER, MASS.

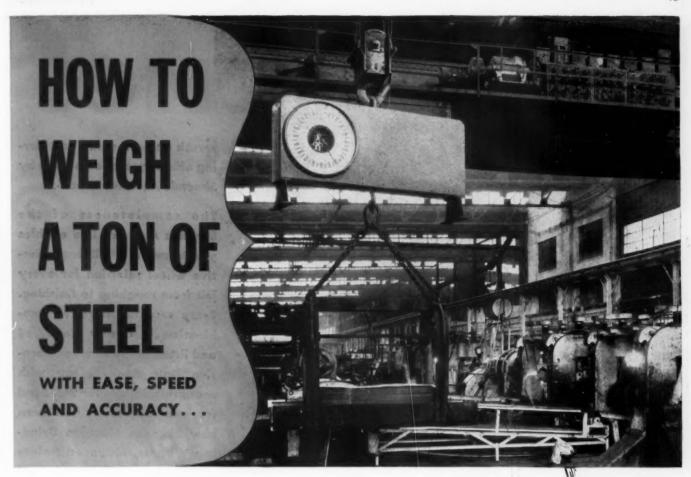


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Recessed and Slotted Wood Screws Sheet Metal Screws Machine Screws Stove Bolts

Also

Cap Screws
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#### ... for less than the cost of a good cigar -

Steel, tobacco, flour, chemicals, nails, bananas . . . no matter what you precess, or handle, you'll find you can do it more economically and faster if you have a Yale-made, Kron Scale policing the operation. For even under the most trying working conditions these scales consistently produce hairline accuracy in the weighing, counting, measuring, testing and batching of tons of material a day . . . at a cost you can measure in small change.

This accuracy comes back to you in the form of consistent product control; savings in materials, shipping charges, time and effort; reliable inventory records and elimination of losses due to errors.

Find out today how Yale-made Kron Scales, which include every industrial type, can be put to work profitably in your business.

And don't forget, Yale has a complete line of hand and electric hoists, hand lift and electric trucks that can help you get more output per manhour by moving more material with greater ease, speed and safety.

Get complete facts by phoning nearest representative, or writing directly to: The Yale & Towne Manufacturing Co., 4530 Tacony Street, Philadelphia, Pennsylvania.

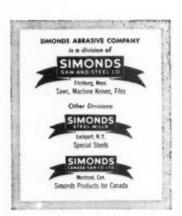


KRON INDUSTRIAL SCALES . HOISTS - HAND AND ELECTRIC . TRUCKS - HAND LIFT AND ELECTRIC



Brush up on the now cost-saving efficiency made possible by Simonds Abrasive Wheels.

The completeness of the Simonds Abrasive line enables you to make intelligent, effective wheel selection for every job from roughing to finishing. Every essential abrasive combination is clearly described and listed in the Simonds Abrasive Data Book, along with recommendations for use. Send for your copy today and learn how Simonds Abrasive Grinding Wheels, Mounted Points and Wheels, Grains, Bricks and Sticks mean greater efficiency by adding essential, up-to-date "know-which" to your grinding "know-how." For all grinding wheel needs consult your nearest Simonds Abrasive Distributor.



A.

## TONCAN IRON

Costs Less in the End



It's a fact! Toncan Iron possesses the highest rust-resistance of all ferrous materials in its price class. That's why any sheet metal installation costs less in the end—if it's made with long-lasting Toncan Iron.

Made from highly refined open-hearth iron, Toncan Iron contains copper—twice as much as copper-bearing steel or iron—plus molybdenum, which increases the effectiveness of the copper. Hence, its rust-resistance is uniform throughout the metal—is unaffected in any way by bending, shearing, punching, corrugating, riveting and other cold working.

For nearly 40 years, Toncan Iron has been a recognized leader in its field—providing low-cost, unfailing rust protection in every type of sheet metal product. And it's easy to work and weld. To get the complete story about this versatile iron, write today to:

REPUBLIC STEEL CORPORATION
GENERAL OFFICES

CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, New York

Republic REPUBLIC STEEL TONGAN MOLYBBERUM IRON

by

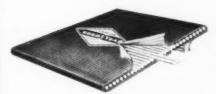
Cobalt Sulphate Crystals



Harshaw is now producing improved quality, technical grade cobalt sulfate crystals (21% Co) of regular octahedral shape. These new uniformly small crystals are far superior to the old large type crystals. They flow freely and dissolve rapidly. Harshaw Cobalt Sulfate Crystals are packed in 100 pound laminated waterproof bags for easy handling and storing. Send your order to the nearest Harshaw Branch — take advantage of this newest Harshaw development.



#### CUT COSTS WITH THESE MILL-PROVED GOODYEAR PRODUCTS



ENDLESS COMPASS BELTS, for compressors, generators, fans, line-shafts and other heavy-duty drives. In countless installations they have outlived and outperformed ordinary belts three and four to one.



STYLE M STEAM HOSE for all steam service up to 100 pounds' pressure. Tough, flexible construction with tube specially compounded to hold saturated steam. Tough cover to resist abrasion.



E-C CORD MULTI-V BELTS are uniform in length, cross section, pull and service life. Their perfect teamwork insures lowest ultimate cost.

When it comes to delivering top-notch performance at rock-bottom cost, nothing in rubber compares with the famed Goodyear trio shown here. Each has established records for long wear and economy in all types of industrial use. And each is specified in the correct construction after careful appraisal of your requirements by the G.T.M. — Goodyear Technical Man.

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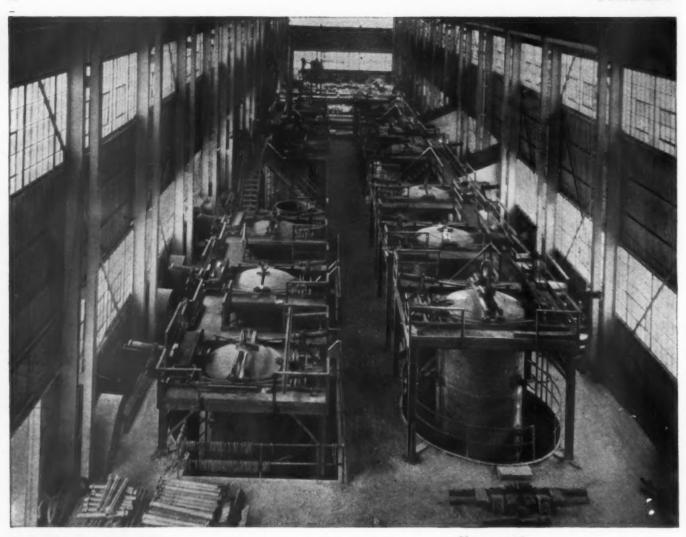
arest nent. For a firsthand report on the savings these star performers can bring to your mill, why not consult the G.T.M.? A line will bring him to your plant. Write: Goodyear, Akron 16, Ohio or Los Angeles 54, California.

FOR HOSE, BELTING, MOLDED GOODS, PACKING, TANK LINING, built to the world's highest standard of quality, phone your nearest Goodyear Industrial Rubber Products Distributor.

Compass, E-C Cord-T. M.'s The Goodyear Tire & Rubber Company

GOODFYEAR

THE GREATEST NAME IN RUBBER



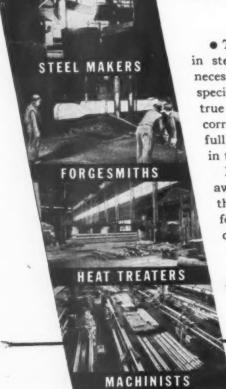
#### the Heat Treating factor in "OK" steel forgings

• The heat treatment factor in steel forgings has become a necessary part of steel forging specifications. This is particularly true of alloy steels where only by correct heat treatment can the full value of the alloys be realized in the finished forging.

National Forge has long been aware of this important factor and thus is set up to provide in its forgings the qualities that only correct heat treating can impart.

It has both vertical and horizontal furnaces and adequate controls throughout the heat treating processes to insure the desired results.

There are many variables involved in heat treating which
demand careful adherence to treating procedures. National Forge
through its years of experience has
well established procedures which
attain correct results. For heat
treated forgings consult first with
National Forge.



National Forge

AND ORDNANCE COMPANY

Irvine, Warren County, Pennsylvania

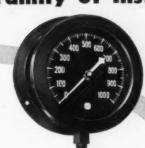
#### USG HELPS YOU SELECT GAUGES

From the World's Largest Family of Instruments



#### SUPERGAUGE

An instrument of test gauge accu-racy, designed for many years of service in heavy-duty indus-trial installations. Withstands excessive vibration and pulsation and provides a safe positive check on process control.



#### ULTRAGAUGE

A superior quality gauge of top-most accuracy and durability, designed especially for chemical and oil refinery applications. Furnished in 4½", 6", 8½", 12" and 16" dial sizes . . . from vacuum up to 100,000 pounds per square inch pressures.



#### ALL-PURPOSE PRESSURE GAUGE

An economically priced pressure gauge manufactured to commercial accuracy. It has a phosphor bronze bourdon tube and a corrosion-resistant move-ment. It's smart in appearance and dependable in performance.



#### REFRIGERATION GAUGE

Important features include: adjustable hub pointer, broad easy-to-read luminous dial, removable screw check. Low side gauge has 1" and 1 lb. graduation and is protected to 200 lbs. overpressure. Also available with external calibrator and retarded movement.



CHEMICAL GAUGE
Clean-Out Type
Designed for service in chemical and processing plants for use on heavy viscous fluids that tend to clog. Supplied with precious metal diaphragms and assemblies for highly corresive chemical application.
Diaphragm is easily removed for cleaning.



6 out of 10 Manufacturers

#### HYDRAULIC GAUGE

A gauge built to give continuing and accurate measurement of hydraulic pressures. The extra heavy-duty movement is designed to withstand the severe shocks and rugged service required of gauges when installed on hydraulic presses and Diesel engines.



#### BOILER GAUGE

For use on hot water heating systems. Indicates on one dial: water temperature, head of water above gauge and pressure in system. Rugged construction with easy-to-read dial.

Available in round or square case.



#### WELDING GAUGE

This well designed gauge incorporates the safety blow-out features in the low as well as the high pressures. It is especially designed to withstand rugged handling. It is a tough gauge for a tough job.





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#### UNITED STATES GAUGE

DIVISION OF AMERICAN MACHINE AND METALS, INC. SELLERSVILLE 25, PA.

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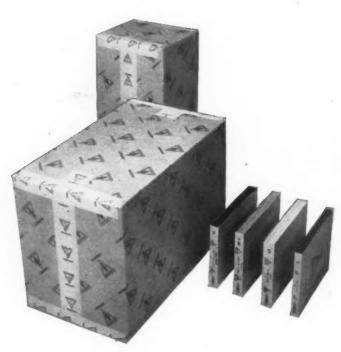
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## BEHR-MANNING SERVICE PACKAGING

to its Distributors & Consumers



After two and one-half years of research into the packaging recommendations of our distributors, dealers and consumers, Behr-Manning announces the Service Packaging of Coated Abrasives, effective January first.

Service Packaging provides standard master packages, standard component resale packages, brand recognition by colored labels, and line identification by wrapper design. Thus, Service Packaging brings to distributors, dealers and consumers a new convenience and economy in the buying, selling, handling and use of coated abrasives.

#### METALITE CLOTH GUY SORET 9'x II' 120 723





















Here is the complete story of Service Packaging, simply told, with photographs of the new packages, full color labels and simplified charts showing package quantities by product, form and size.

BEHR-MANNING · TROY, N. Y.

## CELANESE\* FORMALDEHYDE

Formaldehyde is one of the most important products in the expanding family of organic chemicals produced at the new Celanese chemical plant in Texas.

High quality Celanese Formaldehyde U.S.P. is sold commercially as Formalin—a water white solution containing 40% Formaldehyde by volume, 37% by weight. It is obtainable in both methanol inhibited and uninhibited grades.

A clear, colorless liquid, controlled to meet the most exacting requirements, Celanese Formaldehyde is widely used in resins, adhesives, plastics and in the production of other organic chemicals.

For samples, specifications and technical data on methods of handling, write to Celanese Chemical Corporation, division of Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y.

Look to Celanese for FORMALDEHYDE, ACETALDE-HYDE, PROPIONALDEHYDE—members of the expanding family of Celanese\* Chemicals.

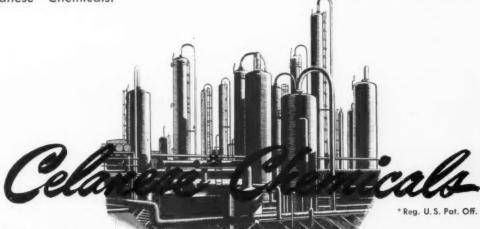
#### GLYCOL

2-METHYL-1, 3-PENTANEDIOL

Combining solvent, lubricating and penetrating properties.

Containing one primary and one secondary hydroxy group, Celanese Methyl-Pentanedial has unusual solubility for a wide variety of resins, and is miscible with most common arganic solvents. Its high boiling point (215°C) plus limited solubility in water give it a combination of properties not found in any other glycol now in use.

Call on Columness for technical assistance and information regarding the application of Methyl-Pentanedial in your field. Our Field Technicians and Research Facilities are always at your service.



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Artist - John Atherton, native of Minnesota

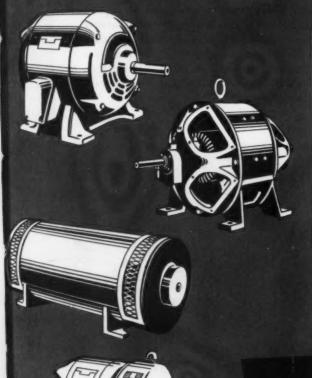
MINNESOTA — annual purchases: \$21/4 billion — mostly packaged.

CONTAINER CORPORATION OF AMERICA



## IMPROVED DRIVE METHODS

BETTER · FASTER · CHEAPER!



The application of improved drives to existing machines offers many practical possibilities for producing better, faster, cheaper. It involves no heavy investment in new machines or relocation of equipment, and no lengthy training of new operators.

Modern Westinghouse drives and controls-through co-ordinated engineering and application-can perform many timesaving, cost-cutting jobs not commonly credited to such equipment.

On the next two pages you will find proved ways these drives are helping manufacturers cut costs, save time and improve products in typical plants.

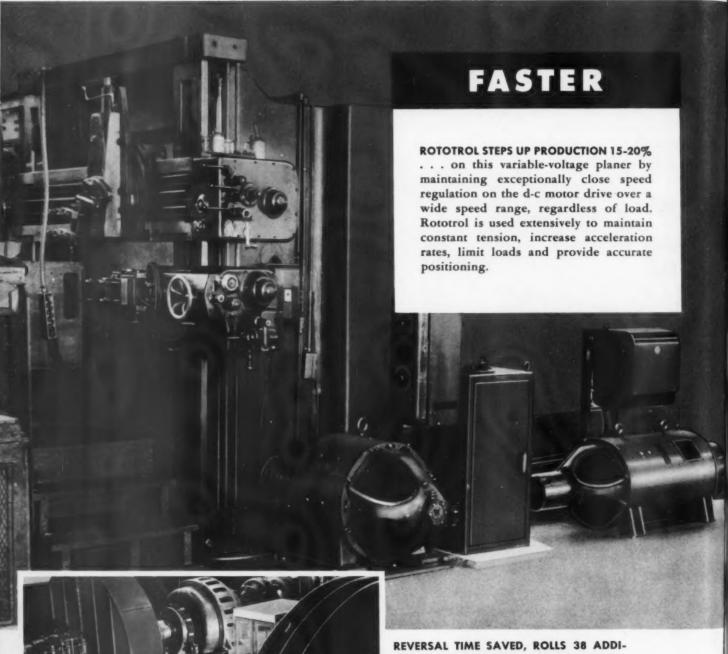


FOR ANSWERS TO PROBLEMS LIKE THESE ...

- 1. How can Variable-Voltage Drives modernize your control systems to give increased production at
- 2. Does Rototrol offer a means of improving operating performance without the necessity of replacing an lower cost?
- 3. Are direct-connected Gearmotors the means of reducing your plant operating cost?
- 4. Is Mot-O-Trol your answer to lower operating costs through more accurate speed control?
- 5. Would motors that require "no lubrication for 5 years or more" solve one of your costly maintenance
- 6. How can you improve product quality by proper problems? drive and control selection?

... turn the page

## Here's how MODERN DRIVE are being used to GET MORE PRODUCTIVE POWER



TIONAL TONS OF STEEL PER HOUR ... Installation of new exciters, Rototrols and control equipment on this 26-year-old Westinghouse 5,800-hp, d-c motor reduced reversal time to 1.7 seconds.

## **METHODS**

#### FROM PLANT MACHINERY

Greater precision, compactness, simplification of functions, less maintenance, higher quality of finished product . . . these are important dividends from the sound application of properly-designed drives. Change-over jobs on present equipment may not necessarily involve completely new drives to obtain the advantages of better, faster, cheaper production. The examples shown here are typical of results achieved in scores of plants through alertness to new drive and control developments.

#### CHEAPER



GEARMOTOR POWER TRANSMISSION is from 23% to 38% more efficient than other methods of speed reduction . . . provides power and energy savings up to 10.5%...completely eliminates maintenance costs common with open gearing, belt, chain and rope drives.

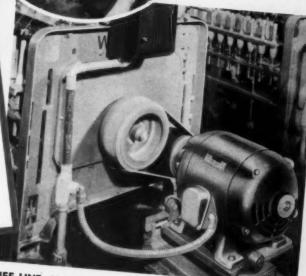
#### BETTER



WESTINGHOUSE MULTI-MOTOR SLASHER DRIVES
PROVIDE IMPORTANT PRODUCT ADVANTAGES . . . .
uniform yarn tension, yarn diameter, beam density;
uniform yarn spacing; less yarn breakage; more
better filler yarn spacing; less yarn breakage; more
warp on the beam; fewer stops and adjustments . . .
all pointing toward increased production, improved
cloth quality and lower production costs. These
cloth quality and lower production costs. These
are typical of the advantages to be gained in many
types of production through use of specialized
Westinghouse drives.



MOT-O-TROL SHOWED A 3-WAY SAVING on this grinding operation. Setup time was cut, chatter marks were eliminated and the improved drive method saved 35% in floor space over the previous cumbersome overhead controls.



LIFE-LINE MOTORS PRACTICALLY ELIMINATE MOTOR MAINTENANCE... Pre-lubricated, sealed ball bearings, requiring no lubrication for 5 years or more, mean no skipped bearings, no overgreasing, no lost pipe plugs and no lost production time due to motors out of service.



FOR MORE PRODUCTIVE POWER...LOOK TO

Westinghouse
PLANTS IN 25 CITIES OFFICES EVERYWHERE

FOR MORE INFORMATION
ON HOW TO MAKE POWER MORE
PRODUCTIVE
TURN PAGE

#### THE RIGHT EQUIPMENT..APPLICATION HELP



Speed increasers (Type SU) are produced in three basic styles comprising a total of 30 sizes. Small units have nine sizes from 1.25:6.50 to 1.25:-12; large units have 12 sizes from 1.25:9 and 2.00:8 to 1.25:12 and 2.00:12.



Speed reducers, in single and double-reduction units, have ratios from 2.82:1 to 9.5:1 and 11.8:1 to 70.5:1. All are external-geared type with shafts in horizontal plane.



Gearmoters are available in three types-Type A, singlereduction with gear ratios from 1.22 to 6.25; Type C, doublereduction with gear ratios from 7.61 to 25.7 and Type E, double-reduction with gear ratios from 31.2 to 58.3



Mot-O-Trol electronic drives provide accurate speed control over a wide speed range from single or three-phase, a-c power. Ratings range from 1



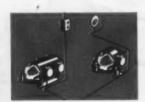
Retetral for modern control systems where one or more of the following functions are to be controlled: speed, load, torque, acceleration or power factor.



-the great-Life-Line motors est advance in motor design in 58 years—are built in 1 to 200-hp ratings, two and threephase, for voltages of 208, 220, 440 and 550,



D-C meters-Type SK-a complete line of standard sizes, 1 to 200 hp, frames 204 and larger, 115-230 or 550



Adjustable-speed, a-c drives have hp ratings of 1 to 15. inclusive, for 220-440 or 550 volts, 2 or 3-phase, 60-cycle operation. Speed range 10:1.



Combination Linestarters. Class 11-206, provide complete motor and circuit protection in one enclosure for motors up to 200 hp.

## Mail coupon for more information

Westinghouse Electric Corporation P. O. Box 868 Pittsburgh 30, Penna.

Please send me more information on the following products:

- Speed increasers
- Speed reducers
- Gearmotors
- Mot-O-Trol
- Rototrol
- Life-Line motors
- D-c motors
- Adjustable-speed, a-c drives

Combination Linestarters

Company

Address

City\_

#### APPLICATION ENGINEERING

The how-to-do-it ability of trained Westinghouse engineers is ready to help solve your plant power problems. Co-operative engineering service demands both an aggressive imagination and broad experience in applying basic principles of electricity and allied equipment. Both of these are part of Westinghouse Engineering Service.

#### RESEARCH

The scope of Westinghouse research reaches into every industry. Wherever power is used and distributed, this research has played an important role in doing jobs better, faster, cheaper.

Westinghouse research facilities are available at any time to help you use the new production tools and apply scientific knowledge in finding practical solutions to production problems.

#### TRAINING MATERIAL

Westinghouse training material includes not only instruction courses in such subjects as electronics and resistance welding, but everyday help in all phases of the operation and maintenance of modern electrical equipment. This help is available in the form of printed literature and training films. Ask your nearest Westinghouse office for further information.

Westinghouse Maintenance Service, for field and shop repairs, includes a nationwide chain of 34 Manufacturing and Repair Plants. A skilled corps of specialists located at your nearby Westinghouse office is ready to help you at any time.

#### RENEWAL PARTS

Parts Warehouses in 29 cities carry genuine Westinghouse renewal parts, and Westinghouse distributors-in addition to their own stocks-can secure parts promptly from any warehouse.



PRODUCTIVE POWE

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Title

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Cast Bronze is the most versatile, most adaptable bearing material available. With the facilities of the Bunting Foundry and Machine Shop plus Bunting Engineering, unusual bearing designs become possible. The Bunting Brass & Bronze Company, Toledo 9, Ohio. Branches in Principal Cities. PRECISION BRONZE BARS BRONZE BEARINGS

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STYLE No.

#### R/M HIGH PRESSURE PACKING

The quality of R/M High Pressure Packing, Style No. 122, is typical of the performance built into all R/M Packings.

No. 122 consists of a specially compounded resilient, heat-resisting rubber core, wound with bias-cut, long-fibre, asbestos cloth. It gives exceptional service on valve stems and steam or air reciprocating rods where surface speed does not exceed 600 feet per minute and temperature is not over 600°F.

A variation of this packing is Style No. 121, in which a core of asbestos cloth, backed with a resilient rubber cushion, is covered with asbestos cloth. No. 121 gives long and satisfactory service on steam hammers, steam pumps, steam engines, air compressors, valves, and other equipment where temperatures are not over 600°F.

Both packings are furnished either in coils, rings or spirals. They are but two of the many time-tested R/M Packings available for your special needs. For all packing problems call your authorized R/M distributor.





#### RAYBESTOS-MANHATTAN, INC.

ASBESTOS TEXTILE & PACKING DIVISION

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IT'S "PACKED WITH SATISFACTION" WHEN YOU USE R/M



N<sup>O</sup> PRUDENT plant-owner would do business without the protection of Liability, Fire, Theft, or Compensation Insurance.

Well, we manufacture insurance. Insurance that, properly used, can protect your property from damage by weather and corrosion. Insurance that comes in a pail!

We call that insurance Hydralt\* Protective Coatings. There are several types, each designed for its specific use. And they cover many of the risks of damage to metal or masonry by moisture, corrosive smoke, acid fumes, or exhaust gases.

You see, *Hydralt* is asphalt in its most modern form . . . a stable, mineral-

colloid emulsion. Use it inside or out, above grade or below, on structures or equipment...where you want dependable, *durable* protection against corrosion and weather.

For *Hydralt* won't flow under heat. It won't become brittle and crack when it's cold. Years and years of constant exposure leave it unharmed.

So see that the vulnerable spots in your plant have *Hydralt's* efficient, economical protection. You can apply it

quickly and easily, by spray, brush or trowel.

Look at it this way. Hydralt Protective Coatings are a form of insurance against damage. Insurance that comes in a pail.

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Products for Industry





For complete foot safety, your men must wear Safety Shoes willingly — all day, every day. Their willingness is their constant protection — the kind of protection you want them to have.

To insure their willingness, make Safety Shoes available to your men in a brand they know and trust — Thom McAn. In plant after plant we've proven that when Thom McAn Safety Shoes are made available — workers do wear them willingly. That means increased protection that piles up new foot safety records.

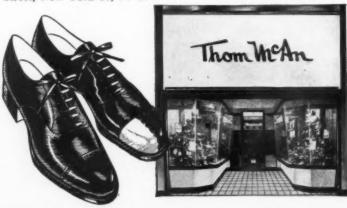
Make Thom McAn Safety Shoes Available To Your Men One Of These Easy Ways:

1. At Absolutely No Cost To You — the nearest Thom McAn Store will stock Safety Shoes for your plant. Trained Thom McAn Fitters insure your men the utmost in foot comfort.

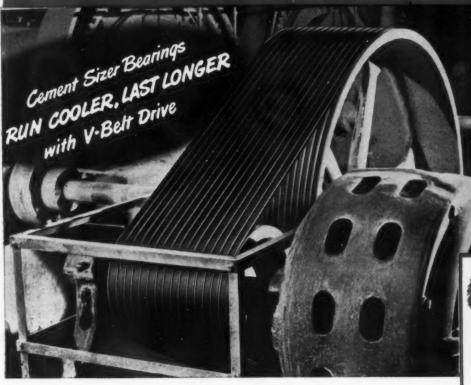
2. If no Thom McAn Store is near you, or if you prefer to continue your own Plant Safety Shoe Department — we'll sell Thom McAn Safety Shoes directly to you at special wholesale prices.

For complete details write today to: Thom McAn Safety Shoe Division, 25 W. 43rd Street, New York 18, N. Y.

Make this store your Safety Shoe Dept.



## are Easy on Bearings



It takes a lot of power to run a cement sizing machine, and power drive bearings take a terrific beating. In the plant of a leading cement producer, the original drives on the five large sizers caused bearings to run extremely hot, resulting in excessive bearing wear and necessitating frequent replacements. Dayton V-Belt Drives were installed. Bearing operating temperatures were reduced two thirds and bearing replacements were reduced to a minimum.

Dayton V-Belts are easy on bearings

because their firm, natural grip in the pulley grooves makes it unnecessary to provide swinging motor bases, idlers and other tension-increasing devices to keep V-Belts from slipping.

Power requirements need not be increased to provide the extra power needed to run idlers. These are some of the reasons why Dayton V-Belts can help you solve your power transmission drive problems efficiently and economically. Your Dayton Distributor will gladly tell you the full story. Call him today.

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NOW! \* Rayon Cords

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- 1. MINIMUM STRETCH
- 2. GREATER FLEX STRENGTH
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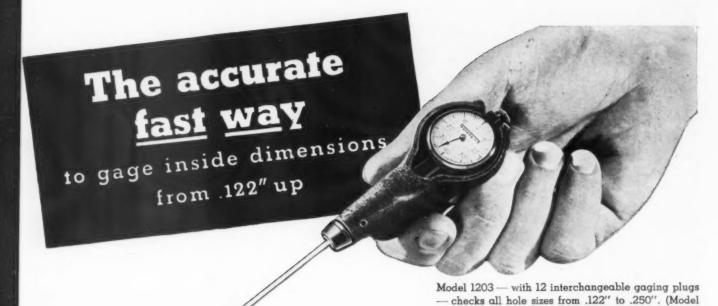
\*Rayon Cords are specially processed by Dayton for use in V-Belts to provide

the most efficient and economical power transmission service for your needs. For the complete story, write for booklet A-469.



Dayton Russes to the same in the yellow page of your following directory.

The world's largest manufacturer of v-Belts



FEDERAL

Why stick to traditional methods of gaging inside dimensions, when an *Indicating* Gage gives more accurate results—with greater speed and positiveness?

Federal offers a Dial Indicator Gage exactly suited to checking any inside dimension from .122" up to 12.665". The recess may be shallow or deep; the opening offset or even blind. Roundness, taper or other eccentricities can be measured throughout the total depth.

The reading on the Dial Indicator is immediately visible; the exact amount of variation is shown. You know instead of guessing.

The Federal line comprises many stock models of various types for gaging inside dimensions. Federal Engineers have also designed more than 10,000 special gages to meet unusual conditions, including gages to check several dimensions simultaneously. We invite you to write for illustrated Bulletin No. 88.

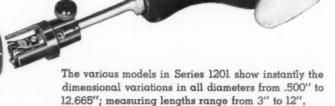


1204 covers the range from .250" to .500".)

Model 149 Caliper Type Gages are adaptable — with arms built to specifications — to many uses; they are convenient and great time-savers.



For exceptional accuracy—and for certain exceptional requirements—the Federal Metricator Air Gage is both highly adaptable and the simplest in construction of all air gages.





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For the past 25 years Riverside has daily conducted a singular and most effective industry conference. Around a table sit the top operating men of every department concerned with the handling of an order, from acceptance to shipment.

All questions and problems in each letter, inquiry or order in that day's mail receives the full consideration of Riverside's Executive Officer, Chief Metallurgist, Works Manager, General Sales Manager, Mill Superintendent, Advertising Manager and Order Department Manager.

By airing freely the *details* of each problem, a complete agreement is quickly obtained and immediate action taken. Result: faster handling of all correspondence, prompt entry of orders into production schedule, and, best of all, days are lopped off lead time. Customers say (emphatically) that they like this friendly, personal attention and cooperation. It prevents misunderstandings, saves time, money, tempers.

Riverside alloys . . . Phosphor Bronze, Nickel Silver and Beryllium Copper are produced to specification. Do what many of our customers do daily, consult us about your individual requirement. We'll be glad to help. Call or write us today.

BIG ENOUGH TO BE HELPFUL . SMALL ENOUGH TO BE FRIENDLY

#### THE RIVERSIDE METAL COMPANY

RIVERSIDE, NEW JERSEY

NEW YORK, CHICAGO, HARTFORD, CLEVELAND





• Right because the twin at left wears an apron fashioned from bags printed with Chase Washout Inks...the popular brand that is printed sharply and clearly yet washes out quickly, easily. The Chase label on every bag gives complete instructions.

Housewives the country over are finding more and more practical uses for Chase Bags printed with Chase Washout Inks—for dresses, draperies, spreads, pillow cases, accessories, etc. Actually, it is estimated that between 100,000,000 and 200,000,000 yards of dress print bags were used in 1946.

You, too, can build good will by providing your customers with this valuable cloth premium. Your nearby Chase Salesman will be glad to give complete details.



COTTON BAGS - TOP MILL BURLAP BAGS SAXOLIN OPEN MESH BAGS - PRO-TEX BAGS - MULTIWALL AND OTHER PAPER BAGS - PROTECTIVE PAPERS



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## filosofy of buying

THE FOLKS in Buffalo are thinking of erecting a monument to the memory of a Purchasing Agent. At least, that is the suggestion made by Gen. Louis L. Babcock, past president of the Buffalo Historical Society, in a recent monograph entitled: "Thomas A. Budd, a Forgotten Worthy". In 1852. Budd, then a Lieutenant in the U. S. Navy, was named pur-chasing agent for Commodore Perry's famous voyage which opened the previously isolated Japanese Empire to world trade. Budd's particular assignment in the preparation for this expedition was to purchase and assemble an assortment of modern inventions which Perry later demonstrated to the Japanese as indicative of western civilization in his effort to win their friendship and persuade them to sign a trade treaty. History attests that the P. A. did his job satisfactorily, for the expedition attained its objective and Japan, for better or worse, took its place in the family of nations.

The purchasing mission was but one adventure in a colorful career. The young Buffalonian was commissioned as a Midshipman by President Andrew Jackson in 1831. He commanded one of the vessels in the Wilkes expedition that discovered the Antarctic continent, and the maps of the National Geographic Society still carry his name, designating one section of that polar region as "Budd Coast". Later he was in command of the flagship Vincennes in an expedition that surveyed the Fiji Islands, and "Budd Island" in that group was named in his honor. He resigned from the Navy in 1853, and for the next eight years commanded a steamer plying between New York and California. Immediately following the fall of Fort Sumter in 1861, he tendered his services once more to the government, and was placed in command of the Penguin, assigned to the South Atlantic Blockading Squadron. The next few months were filled with action, and Budd distinguished himself for his daring rescue of the Huron, another vessel which had run aground in the battle of Port Royal, S. C. But within the year, he fell while leading a landing party against blockade runners on the East Coast of Florida. Ex-President Millard Fillmore led the funeral procession.

I N THE more recent news is another but more dubious tribute to the eminence and public service of a purchasing man. Testifying before the House Committee on Un-American Activities, former Soviet official Victor A. Kravchenko asserted that from the viewpoint of the Communist party, the Top Soviet authority in the United States at one time was a Mr. Sedov, whose title was Deputy Chief of the Soviet Purchasing Commission, and was regarded as the "superior" of the then Ambassador Andrei A. Gromyko.

WHENEVER a lay writer on purchasing subjects undertakes to describe an industrial purchasing program, he seems to become fascinated by the strange miscellany of incidental items that creep into the list, rather than noting the substantial bulk of basic materials and products and operating supplies that constitute the back-bone of the program. The New York Herald-Tribune of August 4th devoted a column and a half of its business section to a report on Joe Taylor's 125-million-dollar annual purchases for Socony-Vacuum Oil Company, which naturally includes the requirements for personnel and whole towns in foreign locations and for a sizeable fleet engaged in coastwise and foreign shipping. So in the list of typical purchases we find: Christmas trees and decorations, dolls, rattles, badminton sets, paint boxes, ties, belts, gloves, handbags, ouija boards, dart games, tennis balls, flower seeds, cosmetics, phonographs and records, washing machines, shaving brushes, tooth brushes, diapers, pots, pans, table silver, magazines, evening gowns, fishing tackle, bicycles, hunting equipment, cameras, glass eyes, artificial legs, X-ray machines and surgical instruments, exotic foods to satisfy the palates and the religious scruples of Mohammedan tanker crew members, and enough ink to fill a large-sized swimming pool (if you like that kind of swimming). It's all in the day's work, of course, but the public may be pardoned if it doesn't get a very accurate or representative idea of the purchasing agent's fundamental responsibility in the industrial picture.

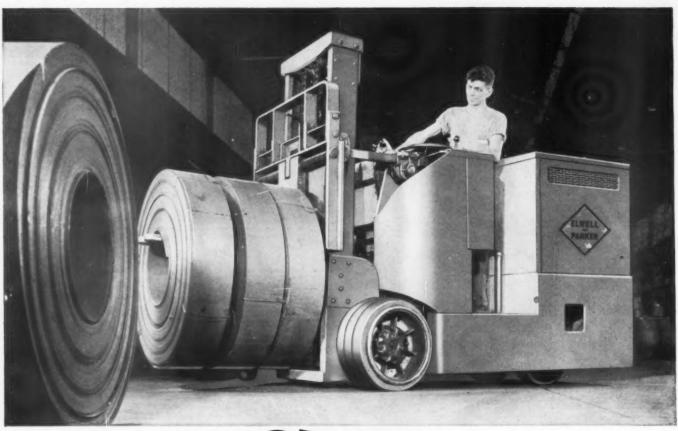
R EADING farther in the daily press, we find a back-handed tribute to purchasing department "cooperation" on the editorial page of the Springfield (Mass.) Union of August 1st. The editorial com-mends the City Park Commission for evidence of a new and apparently overdue burst of enthusiasm and activity in meeting its civic The concluding responsibilities. paragraph states that: "The city purchasing agent did his bit by agreeing with the Park Commission to buy the kind of sprayer the Park Department has been seeking for months, so that our fine elms can be protected, as much as passible, from the inroads of the Dutch elm disease. It was a good beginning.'

WORTH QUOTING is a paragraph from the statement by Willard H. Dow, President of The Dow Chemical Company, in the company's 50th annual report, released last month. Says Mr. Dow:

"Although production and sales increased enormously, we feel the war period was a distinct set-back to our progress. During that period it was possible to proceed with only those items of basic necessity for the emergency, and necessarily many laboratory projects were shelved. This past year many new construction items were expedited, but while many of these are nearing completion, the facts are that many other developments have come to a near stopping point because of excessive costs. These costs can be attributed almost entirely to construction labor unproductivity, and only insofar as we are able to build in the future and show a proper return on the investment will we proceed with further projects. It is a grave situation for a country when progressive development is delayed for lack of national desire to give an honest day's work for an honest day's pay.

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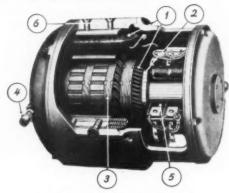
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Ask your man for a complete account of these "plus values" in addition to the many others found only in Elwell-Parker Trucks. The Elwell-Parker Electric Company, 4519 St. Clair Avenue, Cleveland 14, Ohio.

## ELWELL-PARKER POWER INDUSTRIAL TRUCKS



#### Some "Plus Values" of a Precision Product

- (1) All coils insulated with asbestos or glass.
- (2) Leads welded instead of soldered. This new and advanced art produces a uniform circuit between coil and commutator.
- (3) Special quality banding wire held firmly by special clips.
- (4) New type bearing grease withstands very high temperatures. Demountable armature shaft.
- (5) The 8 finger-type brushes (in 4 instead of 2 holders) are firmly held and easy to change. Brushes never stick. Low current density.
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to assure safe, leakproof connections

- \* Uniform Metal Structure free from wall leaks.
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★ A simple pipe fitting, installed and forgotten. If it bears the well known Grinnell "G", you may be sure every precaution has been taken so you may safely forget it.



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Specialties for Plumbing, Heating, Water Works and General Piping



WHENEVER PIPING IS INVOLVED



## Purchasing Previews

A Washington Report

for Purchasing Agents

October 1, 1947

HIGH INDUSTRIAL ACTIVITY THROUGH 1947 SEEN . . . . Additional industries have passed their postwar zenith and adjusted to current demand without appreciably affecting the booming tide of trade in materials and consumer goods.

Significantly, the textile trades, which were the first to feel a drop in sales, now have gone through a seasonal slump and are aggressively producing for winter requirements. The slump was less severe than the usual peacetime pattern, and the recovery was earlier.

While textiles were off, construction and automotive have been increasing. Net effect has been a leapfrogging operation, with one segment of industry taking up the slack of unemployment and dollar volume created as another industry adjusts to current consumer demand.

Some of the factors behind the almost painless readjustment are the solid demand for such basic materials as steel, industrial chemicals and the non-ferrous metals, and the huge volume of purchasing power generated by the 60-million level of employment.

There is a growing chorus of agreement that the momentum of high industrial activity will carry through the remainder of this year.

DECLINE IN SOME INDUSTRIES EXPLAINED . . .

Industries that have slackened off are furniture, machine tools, radio manufacture, rubber products and These industries reached a high postwar peak aluminum. early in 1947.

Machine tool builders report that their sales volume has fallen off-and that employment in their industry has been reduced by about 10%.

These manufacturers point out that they are beginning to feel the effects of machine tools sales by the War Assets Administration. Their reaction to the diversion of basiness toward purchase of surplus is important. They are working to devise and design new developments and improvements in tools that will make the War Assets surplus obsolete, and so create a new volume of demand.

In aluminum production a decline in employment was reported to the Department of Labor early this summer, but the demand for labor has improved since then. Light metals have not walked away with the market, as many observers had forecast. Steel still remains as the backbone of the economy, and as the bellwether of general industrial activity.

EXPORT VOLUME AN IMPORTANT ELEMENT . . . .

While the current conditions are satisfactory and optimistic, there are several factors which raise the question of how long the cycle can carry.

E

Exports constitute an important portion of our production. This is especially true in tools and industrial equipment. Some manufacturers in these fields report that as much as 20% of their order board consists of foreign orders.

The problem raised by the large volume of exports is that they far exceed our imports, and the deficit must be compensated for either by loans or gifts.

At the same time, the magnanimous impulses that spurred our giving with such free hand under Lend-Lease and UNRRA have just about withered. We are giving and lending now with an economic and political purpose.

This is the only condition under which our Congress may be induced to appropriate the necessary sums for European reconstruction and trade. The Marshall Plan is a skeletal framework upon which Europe can mend its economy—with aid from this country.

#### PRODUCTION VOLUME AND JOBS AT STAKE . . . .

Bureau of Labor Statistics has estimated that while exports are not drawing heavily on our manpower resources, they nevertheless are extremely important to employment in some fields.

The metal industries are the most seriously concerned. Approximately 800,000 employed in metal industries are working on export products. This does not mean that employment would drop in direct proportion to any reduction in exports.

Domestic demand would take up the slack in many cases. Total number of workers engaged directly and indirectly in producing for export is approximately 2,000,000.

#### WAR PEAK EXCEEDED . . . .

Industry survey conducted by the Department of Commerce reveals that dollar value of production now far exceeds the wartime peak. The report covers the first half of the year.

It shows that the increase in the dollar value of shipments of durable goods industries was twice that of the nondurable goods, with automobiles and nonferrous metals showing the most substantial gains. Only in transportation equipment (other than automobiles) was the increase distinctly less than for the durable group as a whole.

Among the nondurable goods industries, positions of relatively greater importance were gained by the printing and publishing, petroleum and miscellaneous industries, while food and paper increased at approximately the same rate as total nondurables. Textiles and apparel—with gains of only 10% and 12%, respectively, for the half-year—accounted for a smaller proportion of total nondurable sales than in the like period of 1946.

#### BUSINESS MAINTAINS CAUTIOUS INVENTORY POLICY . . . .

Increase in book value of all business inventories during the first half of the year amounted to \$4 billion, but this increase took place in large part during the early spring.

There still is a small increase in inventory value from month to month. This is largely attributable to price increase, rather than actual increase in volume.

Some changes in the ratios between sales and inventories as compared to prewar have been noted. Among the durable goods industries, throughout 1946 and 1947, the relatively more rapid advance in value of inventories has raised the level of stocks somewhat above that indicated by prewar sales-inventory relationships. During the second quarter of 1947, this trend was accelerated. The nondurable goods industries have maintained lower inventories relative to sales than was true in the decade 1929-39

## Shipping Savings Old Cost, 90¢; New Cost, 40¢

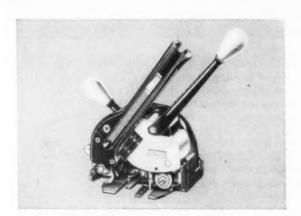
#### West Pittsburgh, Pa., radiator manufacturer uses Acme Steelstrap for better shipping

Every business has its own packing and shipping problems. In low-profit, high-volume operations, the difference between red and black ink at the end of the year often can be determined in the shipping room.

After Shaw-Perkins Manufacturing Company analyzed its shipping costs, an Acme Shipping Specialist was called. The savings his suggestions made on just one item-a 25-section wall-type radiator—are described here.

Why not ask an Acme expert to consult with your firm? There is no obligation, and you may be able to make substantial savings.

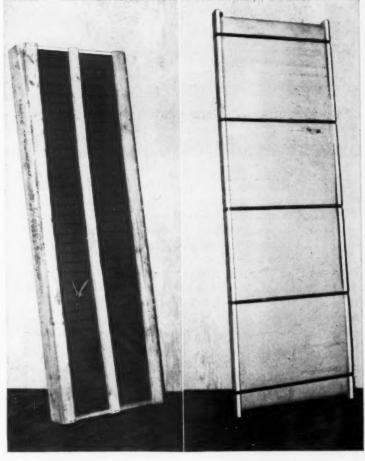
Write for the new booklet, "SAVINGS IN SHIPPING," which gives actual case histories of packing and shipping savings made in many industries.



More Savings for Acme Steelstrap Users—Acme Steelstrapper No. 3 is low available. It tensions, seals and cuts the strap in one operation. It's the lightest strapping tool ever made, has a small base requiring only a 5-inch strapping surface, its magazine holds 100 seals, and its two levers work in opposite directions for better balance and easier

#### ACME STEEL COMPANY

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#### OLD METHOD

Each radiator was packed in a wooden crate in which lumper alone cost \$.6477. Lumber, nails and labor came to \$.9048.

#### ACME METHOD -

Using Acme Steelstrap and 1.11 sq. ft. of lumber costs only \$.4026 for labor and materials . . . savings, \$.5022 per radiator.

#### MAIL THIS COUPON TODAY

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Chicago 8, Illinois

Please send me a copy of your case history booklet, "SAVINGS IN SHIPPING."

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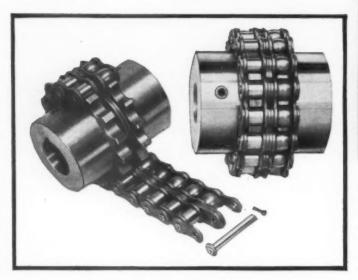
ACME STEEL CO. CHICAGO

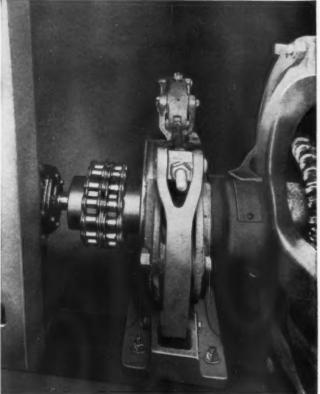
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(1) IF YOU'RE LOOKING FOR a flexible coupling that's efficient . . . extremely flexible . . . shock absorbing without backlash . . . that's easy to install, you'll find the new Baldwin-Rex Tru-Flex the coupling you want.

2 TRU-FLEX COUPLINGS are distinguished by their oversize convex rollers on one chain strand. These rollers maintain only line contact with sprocket teeth, providing extreme and permanent flexibility. This design permits the coupling to accommodate shaft misalignments-without wear on sprocket and chain -and to absorb greater torsional shock loads. Snug fit of the chain assures far longer life than the "sloppy" fit on ordinary chain coupling.





3 INSTALLATION of Baldwin-Rex Tru-Flex Couplings is simple. It is merely necessary to wrap the chain over the sprockets, insert the connector and secure the cotter. Coupling removal is just as easy. Withdraw the connecting pin and remove the chain. The coupled halves are then separated.

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Heads completely machined top and bottom. Milled slots top and bottom. Flat and chamber of the machine point. Carried fered machine point. in stock

FLAT HEAD CAP SCREWS Heads completely machined top and bottom. Milled slots top and bottom. Flat and cham-less burs. Flat and chamfered machine point. Carried in stock.

in stock.

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Square head and headlesscup and oval point—case hardened. Carried in stock.

"SHINYLAND" STUDS All studs made steam-tight on tap end unless otherwise spec.

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AIRCRAFT ENGINE STUDS Made of highest aircraft quality alloy steel, finished to ex-tremely close thread and body tremely close thread and boof tolerance, with precision rolled threads—both straight and step types.

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Made of alloy steel-heat treated-threads rolled or cut treated—threads rolled or cut
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carried by LEADING DISTRIBUTORS SPRING BOLTS

Case hardened to proper depth and ground to close tolerances. Thread end an opened Supplied in page 1 nealed. Supplied in various neated. Supplied in various head shapes, with oil holes and grooves of different kinds, and flats accurately milled.

VALVE TAPPET ADJUSTING SCREWS

Hexagon head style-to blueprint specifications— hexagon head hard; pol-ished if specified—threads



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copper coated inside and out, free from scale, closely held to dimensions. Hard or annealed in standard sizes up to \(^{5}\_{8}\)" O.D. Special sizes cold drawn. Also in Monel and nickel.

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Sturtevant laboratory equipment has all the features of full-sized production machines with extra accuracy and wider range of adjustment built-in. Capable of 24 hour performance, these machines give a true sample of every batch processed. All Sturtevant machines have "open-door" accessibility which permits quick, thorough cleaning . . . pre-

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Redesign with Truarc, and you will cut costs and increase production, too. Wherever you use machined shoulders, nuts, bolts, snap rings, cotter pins—there's a Truarc ring that does a better job of holding parts together. All Waldes Truarc retaining rings are precision engineered, easy to assemble and disassemble, always circular to give a never-failing grip. They can be used over and over again. Send us your problem. Waldes Truarc engineers will be glad to show how Truarc can help you.

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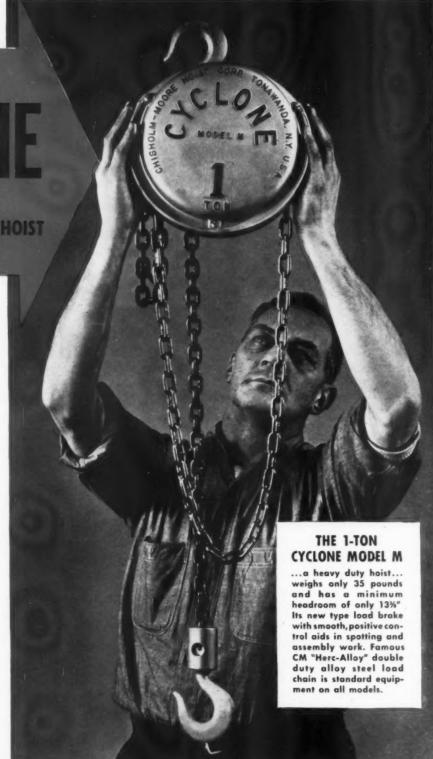
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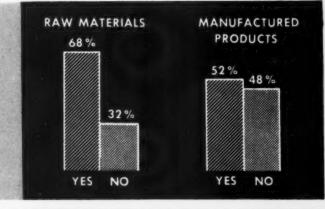
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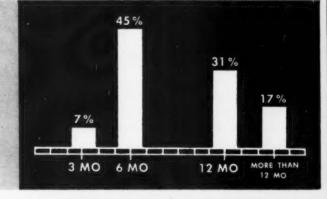
# Which Way, When, and How Far WILL PRICES GO?

Nation-wide interest is now focused on the probable course of prices, with sharp differences of opinion as to whether the pattern that followed World War I will be repeated. To get the views of the men closest to the price situation and best qualified to judge, PURCHASING queried a representative group of purchasing agents in all parts of the country. Their opinions on this vital question are summarized below.

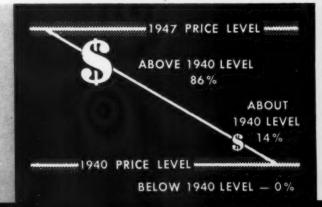
In your opinion, have prices on the principal items you buy reached their peak



2 If the answer to (1) is "yes", how ? soon do you expect a decline in prices



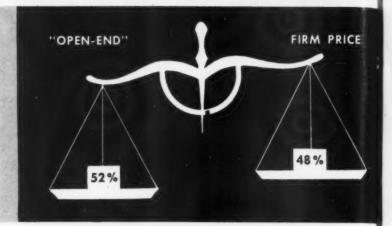
f yes, approximately how far do you expect prices to drop in 1948



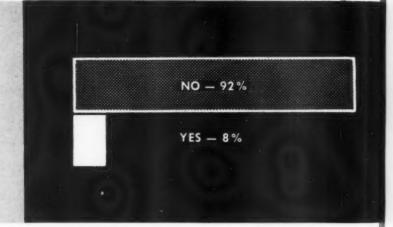
1 In your opinion, what will be the general price situation over the next five years

GREAT DECLINE MODERATE DECLINE 62% REASONABLE STABILITY 26% MODERATE INCREASE GREAT INCREASE

6 In view of the present price uncertainty, have any substantial number of your suppliers retained or returned to "open end" pricing rather than firm prices



6 Do you think that genuine price stability would be best obtained by a restoration of government controls



### WHAT THEY SAY

"You cannot control prices without control of wages, etc. Our present pattern - conditions, etc., is entirely different (in the rooted background) than in 1920, and even since 1940."

"Believe the manufacturers themselves should try to control prices and keep them at a reasonable level. If the manufacturer can't do it then the government should, and also control union labor so that if they want more wages they first must produce more than they are now doing."

"Believe attitude and amount of power acquired by labor and farmers will determine future course of prices."

"Believe that much could be accomplished by strong

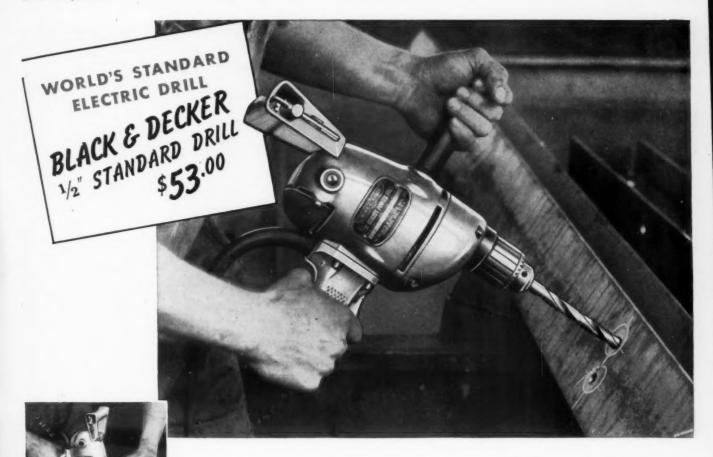
federal government action (not legislation) to stop unnecessary profit-taking."

"Look out for the 1952 depression!"

"If a complete job of control were effected — wages included - and we had an increase in productivity, we would soon reach a reasonable and just price structure — that is, the law of supply and demand would become operative."

"Labor will have to be stabilized. Believe in 6 months business will shut down rather than increase wages (which means prices) further."

"Too much government interference. Labor out of control. Capital afraid to invest. Taxes too high. War possible."



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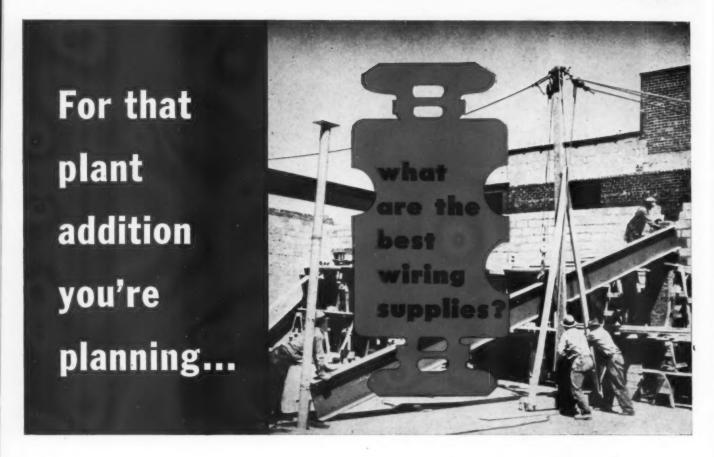
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## PURCHASING

The National Magazine of Industrial Procurement

## OCTOBER, 1947

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### REGIONAL PURCHASING CONFERENCES

THIS MONTH witnesses one of the most spontaneous and constructive developments in the long history of cooperative activity among purchasing men, as seven of the nine N. A. P. A. districts meet for regional conferences. The total attendance at these meetings will be comparabe to the annual convention registration, and the scheduled programs are on a high plane. Experience at previous meetings of the sort promises that "audience participation" in the panel discussions will be far more general than is possible in the larger gatherings, which naturally enhances their value.

The idea is not altogether new. But after a promising start several years ago, it was one of those things that went into wartime eclipse due to travel and convention restrictions superimposed upon work schedules that left little time for most purchasing agents to engage in such activities. Credit for the current interest and enthusiasm goes (1) to Districts 7 and 9 for the revival of their regional conferences in 1946 on a high standard of excellence that could not fail to elicit whole-hearted support and commendation, and (2) to Past President George Aljian, who not only sponsored the conference idea in his own District 1, but urged acceptance of the practice in his personal appearances throughout the country and through the channels of the Executive Committee.

Benefits of the plan are many. It bridges the geographical gap that separates many of the Association members from the annual national meeting, and thus brings the educational, social, and inspirational values of District-wide contacts to any purchasing men whose concept of Association activities has heretofore been entirely at the local level. It provides a medium for the consideration of regional conditions and problems that can be more constructively and effectively handled by collective effort, yet are necessarily excluded from the crowded national program.

Not the least of the benefits is that it discloses and develops talents of personal leadership that can be applied on a broader scale in the national program, to accelerate and strengthen that program to the benefit of all purchasing men.

To the 2,000 purchasing agents who are gathering during these next few weeks in Salt Lake City, Tulsa, Milwaukee, Toronto, Cleveland, Louisville, and Springfield, greetings!

Stuart F. Henritz

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A brief summary of outstanding features of timely interest and importance in this issue, to conserve the time of busy readers



The XYZ of Purchasing, as expounded in our August issue, has not proved to be the end of the story. That discussion of what the colleges are teaching about purchasing agents and their job in industry has prompted a lively correspondence, which is reported on page 97.

dence, which is reported on page 97. This interchange of viewpoints and opinions should be of lasting benefit, for by presenting both sides the issue is clarified and a broader course of policy and action is clearly charted for the Committee on Education, supplementing and strengthening the excellent work that has already been done.

How much do you know about Porcelain Enameled Steel? Ned Cady's article on page 92 will probably give you some new and stimulating ideas about this material, which has been adapted to a wide variety of applications, including many versatile and special purpose industrial products and structural members for both exterior and interior use. The article also lists the factors that should be considered in specifying and ordering.

The time-honored commercial custom of pricing goods with a provision of **Quantity Discounts** for the buyers of large quantities is being viewed in some circles as a discriminatory and monopolistic practice. News from Washington tells us that the matter is under suspicion and under investigation, that it may come under regulation. Turn to page 145 for an explanation of the economic thinking and the legal justification for such a measure.

Industrial buyers have been hesitant in bidding on government surplus property in many instances because of the policy of making all sales on an "As Is, Where Is" basis, without adequate assurances that the property was as advertised or ready recourse in the event that equitable ad-

justment was in order. WAA has now taken steps to liberalize the terms of sale in this respect so as to attract more buyers and to remove much of the gamble from such transactions. A report on current policy is presented on page 109.

This month's guest editorial introduces a member of the new Executive Committee of N.A.P.A. Bill Rier of Memphis, President for District No. 7, in his message on page 91, stresses the importance of **Personal Contacts** in purchasing.

The monthly survey of purchasing opinion, reported on page 81, concerns the vital question of **Price Trends**. Purchasing men are very close to this situation. Their judgment of markets is the key to buying habits and a potent force in shaping business policy. The questions covered in this survey deal with the probable direction, timing and extent of price changes.

The National Institute of Governmental Purchasing held its Second Annual Conference in New York City, September 8-10, with a program of significant and authoritative addresses and constructive panel discussion on topics of major importance in the broad field of centralized



purchasing. Keyed to the specific problems of a specialized field, the program is likewise of interest to every purchasing man who wants to keep abreast of what is going on in his profession and who, as a citizen, recognizes the contribution that sound purchasing can make to the interest of the public and the taxpayer. A report of the proceedings appears on page 120, and several of the key addresses are presented in full.

What would you do with a requisition that called for a typewriter with Russian alphabet and found that there is no standard keyboard in that language? That's one of the everyday problems in buying for the United Nations, as described by F. A. Mapes on page 133. It is a story rich in human interest, the sort of experience that makes purchasing one of the most fascinating of all business careers.

Big Business is the backbone of American production and industrial leadership. At the same time, it is blamed for much of the discontent currently rife in our complex civilization. Don Mitchell, on page 129, tells how one company has found a way to retain the personal touch and to meet the social obligations that are inherent in the system. Here is a practical plan for efficiency and satisfaction through decentralized operation with centralized control.

Are you making full use of these monthly departmental features compiled especially to keep you informed on recent industrial developments? A selected list of new Trade Bulletins and Catalogs that are yours for the asking (page 14) and the illustrated summary of New Products & Ideas now available for the industrial buyer (page 152) will help you to keep up-to-date on these matters.



### The Department Store Idea

When you think of a Ryerson Plant, picture a huge department store featuring all kinds and shapes of steel. In place of the ordinary sales personnel, think of a large staff of experienced steel men—a sales department that's been carefully trained to guide your steel purchasing—to see that you get the exact steel you need for the job at hand.

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RYERSON STEEL

# eroonal Contacts are Important in Purchasing

By W. E. Rier

W. E. "Bill" Rier is Director of Purchases for the Rotary Lift Company of

Memphis, Tennesssee, and Vice President of the National Association of Pur-

chasing Agents for District No. 7. An engineer by training (Purdue Univer-

sity), he came to Rotary Lift in 1926 to practice that profession. After five

years in the engineering department, he was put in charge of purchases

and has served the company in that capacity since 1931. Four years ago,

he was one of the organizers and charter members of the Memphis Associa-

tion of Purchasing Agents, and was elected as its first President, holding

that office at the time that Association affiliated with N.A.P.A. in January

1944. This was followed by three terms as National Director, during

which he took an active part in the affairs of District No. 7, em-

THE purchasing agent today must be as good a salesman as the best salesman who calls on him, because the P. A. also has a selling job to do. He must sell himself, his company, his needs and requirements to his suppliers. And, in doing so he is in competition with the purchasing agents of other companies who use the same materials that he does.

There was a time when some companies may have measured the success of their purchasing agents by their ability to buy at the very lowest prices and put the squeeze on suppliers at every possible opportunity. That time may come again, but it's not today and not in the foreseeable future. This business of playing one supplier against another and jockeying for every last cent of price reduction hasn't worked very well in the past few years. In fact, it hasn't worked at all!

The traditional roles of purchasing agent and salesman have been dramatically reversed, and this has been made the subject of many cartoons and jokes. Instead of the salesman wooing the P. A., it's been the other way around. . . . with the latter catching the lunch checks, buying the Christmas presents, etc. Instead of the salesmen having to (Please turn to page 346)

bracing the rapidly growing industrial area of the Southeastern States. Here his all-round ability and capacity for work, his engaging personality and qualities of leadership, were quickly recognized, and his selection to represent that District on the National Executive Committee is a natural sequel. A man of action, his versatility is well illustrated by his record during World War II, when he patrolled the Mississippi

River in the Memphis area as a member of the U.S. Coast Guard Temporary Reserve, and also served as West Tennessee representative on the State Advisory Board of W. P. B.





## ном то вих Porcelain

The adaptability and advantages of this process for a wide variety of industrial uses and products are not generally known. Here are some practical precautions to be observed in designing and specification.

By E. L. Cady

EVERYONE is familiar with such porcelain enameled products as pots and pans for cooking. Sinks, refrigerator cabinets, signs, bath tubs, store fronts also are ordinarily recognized as being made of porcelain enameled steel. But relatively few persons know that bearings which can be lubricated by any liquid and are highly resistant to acid products handled by pumps, electric motor parts which must resist abrasion and must have controlled dielectric properties, crucibles for melting and pouring light metals for castings, exhaust stacks for submarines and for other engines, pipes for handling corrosive gases, and hundreds of other "severe service" products also are porcelain enameled. Porcelain enamel which withstands indefinitely the most corrosive acids to be encountered in the wash room usually is thought to be "stone".

Parts for fruit juice extractors. electric mixers and other household appliances are porcelain enameled. Whole buildings are planned to be faced with this material both interior and exterior, the object being to nearly eliminate building maintenance costs. Added to these are such construction items as tile, murals, wainscoting, roofs, shutters, awnings, window boxes, window frames, entrance hoods. Typical of industrial equipment items are acid tanks, hot water heaters, chutes for corrosive and abrasive materials.

Many of these uses might never

have been tried if war emergencies had not compelled the making of experiments. In some of the others this product was considered to be a "secondary" or "substitute" material until it showed how it could survive the almost complete lack of maintenance which almost all materials suffered during the war years. The product values disclosed were so high that the porcelain enameling industry became aware that it could enter markets which it had not previously considered suited to its products.

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Added to this, many advances and improvements in materials and processes are coming along rapidly. Porcelain enameled products are going to command increased attention by industrial purchasing agents in the months ahead.

Porcelain enameling is a process by which inorganic materials are fused to the surfaces of metals. The process requires special materials, skills and equipment. Porcelain enameling cannot be done in a plant not specially set up for it. It cannot be done in the field.

The purchasing agent, then, has two general methods of buying. He can have the enameling plant handle the entire assignment, including redesigning the product to make it



(Photographs by courtesy of Caldwell Glass Bearings, Inc., Erie Enameling Company, Pfaudler Company, Lustron Corporation, General Electric Company, Morris Stamping Company, Finish, and the Porcelain Enamel Institute.)

Exterior and interior view of Lustron's all-porcelain-enamel house. The range of colors and surface finishes, and ease of cleaning and maintenance, are features that appeal to the housekeeper.

## **Enameled Steel**

suitable for enameling, doing all the metal work, applying the porcelain enamels, even performing the final assembly to create a finished product. Or he can have his own plant do the metal fabricating, shipping the fabricated items to the enameling plant for processing.

There are optional middle grounds, of course, regarding the designing of the product and the assembly of the enameled components into final products. But practically no mechanical operations can be performed on the products after enameling. The enameled products cannot be stamped, punched, machined or deformed without damage to the enamel coatings.

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#### Metals for Enameling

Porcelain enameling is done at temperatures ranging generally from 1500 to 1800 degrees Fahrenheit, depending upon the coating materials. Continuous research is made to reduce these temperatures, and such reduction is one of the industrial advances which is confidently to be expected. But these temperatures eliminate many metals from consideration for the process. And they affect the permissible designs of products, since steels at these temperatures are weak and are likely to deform.

The porcelain enamel forms both mechanical and chemical bonds with the steel. The bond is a true fusion, but that fusion is not deep. And this is another limiting factor.

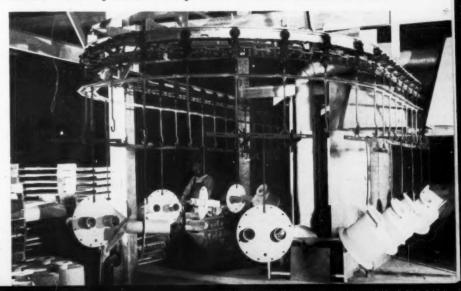
The porcelain enamel bonds with, or else is excluded by, whatever it finds at the surface of the metal. There must be no soils upon the metal and no impurities immediately at or below the metal surface.

Steel sheets, it will be recalled, are products which result from the rolling of ingots. The ingots are castings, and as such can contain impurities. The rolling processes

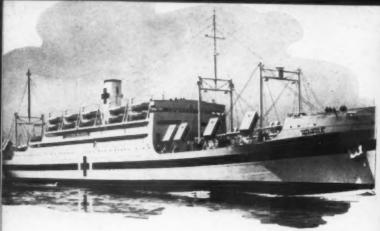
tend to break up these impurities into extremely small islands which are so separated that they cause no significant weaknesses in the finished sheets. And for ordinary purposes, ordinary control of impurities and of carbon and other metallurgical contents of the steels is more than sufficient.

For porcelain enameling, however, ordinary metallurgical control of the steel is not sufficient. The steel should be especially free from solid or gaseous impurities and should be highly uniform in composition. In addition it should be low in carbon content, have good welding qualities, good drawing and other working qualities, and good surface texture. There are different grades of enameling stock, and selection must be made in accordance with the enameling problems and the services for which the finished part is intended. Such selection is an engineering problem and often is solved with the sales engineering assistance of the steel

Modern continuous drying and firing equipment is used in the production of such parts as these porcelain enameled exhaust mufflers.



**OCTOBER**, 1947





Porcelain enameled non-structural bulkheads are used throughout the U. S. Army Hospital Ship Marigold, as shown in the view of its operating room, where permanence and cleanability are of primary importance.

makers and the porcelain enameling houses.

During the war and reconversion periods, porcelain enameling contractors worked on nearly any steels they could get. Common black iron sheets were successfully enameled. But their experience only confirmed the common knowledge of the trade that such steels are handled only with high percentage of rejects, reworks, and other cost-elevating factors. The trade therefore looks forward to the receipt from the steel mills of even cleaner and finer enameling sheets than were obtained before the war. In the meantime the buyer must check the immediate situation as to qualities and availabilities of sheets before he specifies.

Castings, if of metallurgical components and structures acceptable to the enameling houses, can be porcelain enameled. Pipes, tubes and other shapes can be enameled. Although the heaviest sheets now customarily enameled are 12 to 14 gage, the enameling contractors expect to be processing plates as thick as three-quarter inch as soon as the necessary materials become avail-

able. This will greatly extend the use of porcelain enameling for the protection of high pressure and other heavy duty vessels and other devices.

#### **Engineering Design Factors**

There are some design factors which the purchasing agent should consider, and others which belong in the realm of the product engineer

Purchasingwise, consideration should be given to the fact that porcelain enameling does not produce highly accurate products. The accuracy is limited first by the "as fabricated" precision of the stamping, bending and other forming operations as applied to the steel, and of any welding operations by which products are assembled before

This accuracy is further modified by the behavior of the steel at the enameling temperature. The temperature does not reach full anneal but does reach a sub-critical point high enough so that any strains put into the parts by the cold fabricating operations can relieve themselves somewhat by causing the steel to deform slightly. At these temperatures, steel parts of light gages and large sections can be caused to sag by the pull of gravity if their structural shapes are not such as to prevent this. The warpages and sags add up to inaccuracies of finished parts.

The enameling material tends to flow while being applied. Its coatings are likely to be thickest, then, at the outer edges of parts, and around the edges of punched or drilled holes, and within tight or interior corners. This factor is somewhat variable and is the final modification of accuracy.

No general figure of precision should be used for a specific item unless confirmed by the porcelain enameling contractors. But in general this process rarely is employed where tolerances must be closer than plus or minus .03", and wider tolerances are preferred.

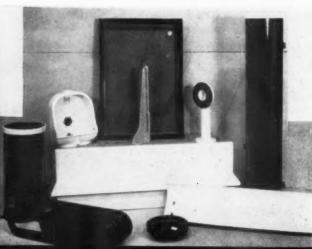
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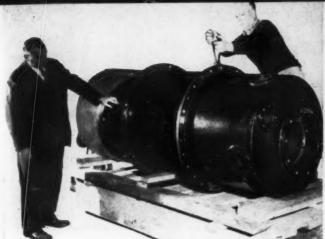
Corners or bends should be curved rather than sharply angular. The radius at any curve almost never should be less than threesixteenths of an inch.

These tolerances and radii indicate the general field of parts, de-

Porcelain enameled steel finds a wide range of applications in industrial equipment and in a variety of finished products.









Resistance to weathering and corrosion make porcelain enameled steel adaptable for roof-top air markers and for submarine exhaust mufflers.

signwise, in which the process fits. They may be used for preliminary or "starting point" consideration of the suitability of products for the process.

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Engineeringwise, such factors as embossing to strengthen the part against the effects of high temperatures, avoidance of unsymmetrical embosses which tend to create inequalities of strain within parts, the placing and applying of welds, the necessary clearances at holes and within corners when assembling porcelain enameled parts, and the general design shapes and factors which create strengths and avoid thermal and mechanical strains, all must be considered. But unless handled by a purchasing engineer these matters usually are settled by consultations between the design engineers and the enameling contractors. It is wise to make sure that all factors which might improve purchasing values have been worked out.

#### Prefabricating

If the purchasing company is to fabricate the items which are to be porcelain enameled, then it must first select a steel which is satisfactory to the enameling contractor and then must follow carefully controlled procedures.

"Steel sheets must be kept clean and free of rust in the warehouse. Finger prints on the parts must be avoided. Any mineral oil which gets on the steel is likely to be adsorbed at the surface and to present a difficult and costly cleaning problem, unless the oil is of a type specially recommended by the oil makers for use on enameling sheets.

use on enameling sheets.

The oils used for drawing and for protection subsequent to fabricating should be selected in consultation with the oil makers and with the enameling contractors. Generally, such drawing oils should be completely saponifiable or otherwise completely removable by industrial cleansing methods, should contain little or no pigments, and should have non-oxidizing bases. They should be protective to the metal surfaces.

Welding must be done carefully. Welds must be free of carbon deposits and must be clean, sound, solid, free from cracks, bubbles or inclusions. One hundred per cent

efficient welds generally are necessary, the purpose not being the preservation of mechanical strength of the metal but that of avoiding weak areas which will stretch or warp unduly under the enameling heat and thus cause defects in the enameling.

The surfaces of finished parts must be free of scratches or abrasions. This means careful methods, not only in the production and inspection departments, but also in the packing and shipping of the fabricated parts to the enameling contractor.

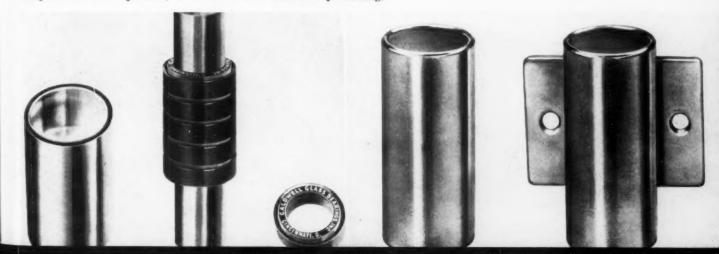
Prefabricating the parts is perfectly practical and is the preferred method of many of the largest buyers of porcelain enameling house services. But when this is done the porcelain enameler has a strong interest in the supplies, methods and controls applied to the fabricating.

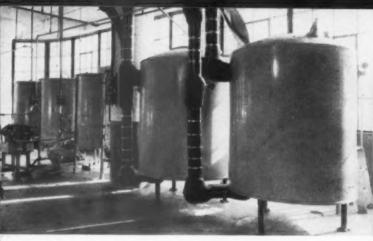
#### Coatings

Porcelain enamel coatings are a family of products and must be selected in accordance with particular services and purposes. Selection factors are in two general classes:

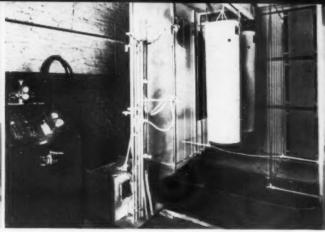
1. Corrosion resistance to weath-

Porcelain enameled bearings have made an impressive record of service under conditions where corrosion resistance at high temperatures is important, as in food and chemical processing.





The food industry is a large user of porcelain enameled equipment, as in these storage and filter tanks for fruit flavorings.



A newly developed process — electrostatic spraying is used in applying porcelain enamel to range boilers.

er, acids, alkalies, other chemicals.

2. Mechanical endurance under abrasion, gouging, shock loads, abrupt temperature changes.

There is no problem about corrosive conditions ordinarily to be found about the home, in the ordinary industrial applications, or in exposure to weather. But sometimes the extent and severity of corrosive exposure can make a difference in the type or types of coating materials and in the number of enameling coats which should be applied. And since the cost per coat is substantially the same, so that three coats cost about three times as much to apply as one coat, a careful designation of the service conditions which the product must meet will enable the enameling house to keep its costs and prices down to the practical minimum.

Porcelain enamel is highly resistant to most of the organic and mineral acids and to wide lists of other chemicals. But special coatings may be needed for some conditions. As in nearly all severe corrosion problems, the resistance may be in degree only and the coating selection factor may be that of the time period over which the resistance will be satisfactory. The details of standard tests for such resistance can be obtained from the Porcelain Enamel Institute Inc., Washington, D. C. Any severe problem should be discussed with the enameling houses and with the institute.

Mechanical endurance is a matter of coating materials and of thickness. Aside from abrasion and erosion, any inability of porcelain enamel to withstand shock, flexing, and other mechanical loadings is caused jointly by the hard and therefore brittle nature of the coating and by inability of the coating to transfer the stresses to the supporting metals.

Transfer of these stresses is best when the coating is thin. Likewise, any tendency of the coating to distribute stresses within its own hard structure rather than to require the stress absorbent metal to bear them, is highest when the coating is thick. Therefore mechanical loadings of the porcelain enameled products are best borne if the coatings are thin.

To meet this condition the por-

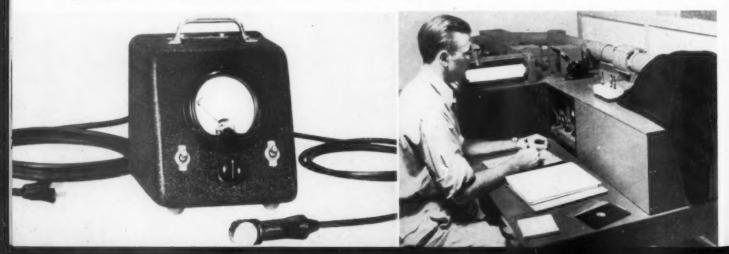
celain enamel industry has been making steady progress. At the end of World War I, oxides of tin were widely used in coatings, and total thicknesses of .020" and even .040" were not uncommon. But with increasing uses of oxides of antimony and zirconium, the required thicknesses of coatings were reduced. Right now, with the latest and most promising development of oxides of titanium, the thicknesses of coatings may be reduced to .002" to .004". With every such reduction the ability of porcelain enamel to take shock, impact and even flexing loads becomes that much greater.

#### Colors

Porcelain enamels can have almost any desired colors, but cannot be given metallic tints such as silver, bronze, aluminum, etc. There is no problem of fading of colers in the sun. The colors are permanent.

Many different finishes, ranging from extremely high reflectance gloss to very dull matte, can be obtained and duplicated at will. Special finishes, designated as "Terra Cotta", "Granite", etc., because of (Please turn to page 352)

New standards of uniformity and control are made possible with these instruments - a film thickness gauge and a recording photoelectric spectrophotometer for color matching different batches of enamel.



### CASE STUDY IN EDUCATION

Interchange of correspondence written as a sequel to the editor's suggestion that some direct action be taken toward correcting erroneous statements on purchasing in college textbooks, as one step in a broader acceptance of educational responsibilities



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THE FOLLOWING correspondence resulted from an article published in the August issue, concerning one of the basic problems of business education as it affects the teaching of purchasing. The article, entitled "The XYZ of Purchasing", pointed out how misleading statements about purchasing though casually included in courses and textbooks not directly dealing with the subject, nevertheless tend

to undermine the effect of established courses in purchasing, which have up to this time been the chief concern of the N.A.P.A. Committee on Education, and thus to nullify much of the excellent work that has been accomplished. Cited as an example was the textbook *Principles of Marketing*, by Professors H. H. Maynard and T. N. Beckman of The Ohio State University.

The article urged the Committee to make it a part of their program to undertake the correction of such misleading concepts of purchasing, and to avoid a recurrence, by calling the errors to the attention of the authors and making available to them authoritative data on the purchasing function and modern practice in this field—a broad and personalized program of "educating the educators", with the objective of accurate, coordinated, and consistent treatment of the subject.

As a start in this direction, the

staff of Purchasing decided to follow through on the case in question. It is not, of course, a complete laboratory test of the proposed method. In the first place, a great deal depends upon the auspices under which the approach is made, and this is distinctly a project for the professional association rather than for a commercial publication. Secondly, our own position and effectiveness in the matter were doubtless prejudiced by the published criticism of the book in question. and understandably so. We were thoroughly aware of this. Nevertheless, it seemed well worth while to make the test. The results to date, as published below, are highly interesting, and demonstrate anew the vital importance of undertaking some such program.

In case you have mislaid your copy of "The XYZ of Purchasing", a limited number of reprints are still available and may be obtained upon

# I. A letter

from Arthur H. Dix, Director of Research, PUR-CHASING Magazine, to the Technical Book Editor of The Ronald Press Company, publishers of "Principles of Marketing," by H. N. Maynard and T. N. Beckman. August 20, 1947.

Copies to Professor Maynard and Professor Beckman.

Dear Sir:

One of my boys, who is in his fourth year at Lafayette College, is studying marketing. The text-book for the course is "Principles

of Marketing," published by you and written by Dr. Harold N. Maynard and Dr. Theodore N. Beckman.

I have glanced through the book

and congratulate you on its comprehensiveness. As the Conover-Mast Corporation publishes industrial journals, I read Chapter 19, "Marketing Industrial Goods," with particular care. On the whole it is excellent, except for the paragraph "Diffused Buying Responsibility," page 337.

Apparently this paragraph, which deals with the place of the purchasing executive in the procurement of equipment and supplies for industry, has not been revised since the book was originally written, in 1927, as it does not take into account changes that have taken place in the past quarter century.

As you know, in practically every field there has been an accelerated aggregation of industrial power among a relatively small number of large organizations.

Large manufacturing organizations cannot function properly without specialization of executive functions. Thus responsibility for sales is vested in a sales department, responsibility for purchasing in the purchasing department.

Very few large manufacturing organizations attempt to operate without centralized purchasing. Purchasing is among the more important of the executive functions, as indicated by the fact that, of every manufacturing dollar, an average of 58¢ goes into purchased materials.

In large organizations the scatteration of buying is too wasteful to be tolerated, leading, as it does, to irregularities, difficulty in maintaining inventories, missed cash discount dates, and small quantity purchases (at higher prices).

Thus in the large organizations, buying is the specialized responsibility of a department of buying experts, rather than the occasional duty of many executives whose major duty lies elsewhere.

Even in the case of highly technical equipment, it is general practice for several competing makes—usually five or six—to be agreed upon by purchasing, engineering, manufacturing, and any other departments interested. The purchasing department decides which of the agreed upon brands will be ordered.

As you can appreciate, top management of large organizations finds it wise to insure that ultimate power of selection reside in the purchasing department, and it avoids wherever possible—and usually it is possible—the single supply source.

We think the following sentences, appearing on page 337, of "Principles of Marketing," should be rewritten, as they do not reflect to-day's conditions:

"The purchasing department occupies a role which has no counterpart in consumer goods, but sales-men of industrial lines have long since learned that in thousands of companies he has little influence in determining what brands or quantities shall be purchased other than for routine supplies. Installations are made after careful investigation of the merits of rival lines by the plant engineer, the superintendent, sometimes by foremen and almost always by the president and the board of directors. Even consulting engineers and architects may influence a decision to buy certain products. Equipment is often selected because of the personal wishes of a foreman or plant superintendent. Tool room foremen exercise a decided influence, for they are able to speak of the merits of lines used in the past. Reciprocity must be considered, and officials often have personal acquaintances who are to be favored, at times even against the best judgment of the purchasing agent."

The above paragraph mentions "in thousands of companies he (the purchasing agent), has little influence..." The phrase "thousands of companies" is vague and is likely to delude the student, for the latest estimate of the Department of Commerce is that there are 276,500 manufacturing companies in the United States. Therefore, "thousands of companies" would be infinitesimal.

The point is that of these 276,500 manufacturing companies, some ten or eleven thousand account for about 70% of the output. These are the industrial giants. Practically all have centralized purchasing departments.

We doubt that in the large companies "Installations are made after careful investigation. . .almost always by the president and the board of directors." The members of the board are hardly likely to be called in, and in the very large companies the president has too many other responsibilities to concerrn himself with the purchase of "electrical generators, Diesel engines, steam boilers, lathes, punches and shapers. . ."—we quote from the definition of "installations" on page 335.

Our criticism of the paragraph is that it accentuates exceptions. Doubtless "personal acquaintances are favored" to a predominating degree in exceptional cases and per-

haps to a slight degree in all cases, but competition in industry today is too severe to permit the continued existence of any company that long continues to buy on other than a merit basis.

We have no argument with the phrase on reciprocity. This is a very important factor. It is not noticeably diminishing, and it might be well to amplify this portion of the paragraph.

It would be idle to assert that plant executives - superintendent, factory managers, foremen, etc.— have little or no authority. They are decidedly important factors in the marketing of industrial products, but since the textbook was written in 1927 there have been certain revolutionary changes in industrial procurement, and we know that the authors, and you as publisher, will want the book to portray present conditions. In general the trend is for engineering and operating executives to specify requirements and for the purchasing department to be responsible for obtaining products meeting the speci-

The editor of Purchasing magazine, Mr. Stuart F. Heinritz, will be glad to consult with the authors in the preparation of a suitable section on the place of the purchasing executive in industry today, and we will make our considerable file of research data available to the authors. No doubt the National Association of Purchasing Agents will likewise be willing to cooperate.

Mr. Heinritz is the author of "Basic Principles of Purchasing," which is something of a classic in its field. It contains information that the authors will doubtless find of value, so we are sending each of them a copy separately, with a copy of this letter. We enclose with this letter-and with the copies-a clipping of an article in our current issue, mentioning misconceptions appearing not only in "Principles of Marketing," but in other textbooks. We are also enclosing another article that may be of interest, entitled, "Getting Past the Purchasing Agent."

It is not our intention to be captiously critical, and we know that this letter will be accepted in the spirit in which it is written—that of a desire to cooperate in presenting users of the textbooks with an exact picture of conditions as they are today.

> Sincerely, Arthur H. Dix

# II. A letter

from Theodore N. Beckman, Ph.D., Professor of Business Organization, The Ohio State University, Columbus, Ohio, to Arthur H. Dix. August 27, 1947.

Copies to Professor Maynard and The Ronald Press Company.

Dear Mr. Dix:

I have just received a copy of your letter to the Ronald Press Company, dated August 20, together with copies of two articles by your Mr. Stuart F. Heinritz. In the absence of Professor Maynard from this city, I am replying on my own behalf, but I feel sure that Professor Maynard would agree with

my position in the matter.

Before I say anything or take issue with any of your statements concerning the contents of page 337 of our Principles of Marketing, let me state that we have no axe to grind. We are primarily interested in the truth as we find it through research, numerous personal contacts as consultants, work with governmental agencies, and as consultants for a number of leading trade associations over a period of years. Despite such wide contacts with business, we do not claim to "know it all" and are very anxious to be corrected and to have errors or "so-called" errors called to our attention. Whenever such material is called to our attention we give it very careful consideration and, if we are found to be in error, an attempt is made to correct it through an early revision of the affected contents. It is certainly not our intention to berate or lower the position of purchasing agents in industry, any more than it is our intention to put undue emphasis on any other function of or position in marketing. In fact, if you read beyond Page 337 you will find a whole chapter (22) devoted to buying. In other places throughout the textbook buying has been emphasized as an important marketing function. At the same time we have no quarrel with anyone who attempts to glorify a given position or area in business. All essential work in business is dignified and glorious as far as we are concerned.

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The above statement does not mean that what we say on Page 337 is incorrect. The contrast between a purchasing agent in a manufacturing concern and a buyer for a department store or for a wholesale house still holds good. Furthermore,

the statement that in thousands of companies the purchasing agent has less influence in determining what goods to buy other than for routine supplies is still a correct statement. It is possible that such statement might be rephased in order to exempt from it the small number of large concerns which, according to your letter, account for a substantial proportion of the total purchases. As a matter of fact, when a concern is very large, it is often highly integrated and to that extent the purchasing problem becomes less and less important as many of the socalled purchases and sales are in the form of interplant transfers.

It is not the purpose of this letter to answer the question as to whether you are right or we are right; nor is it my purpose to emulate your Mr. Heinritz by running to press in righteous indignation with vituperative and vitriolic language, I frankly believe that Mr. Heinritz was hasty, to say the least, and ill advised unless he wanted to use us as "whipping boys" in order to put his idea across in a crusading fashion. Had he written to us in the first place, as you have written to our publishers. I am sure that we would have given the matter immediate attention and would have arranged for whatever rephrasing is necessary to reflect the whole truth, covering the numerous small, as well as the relatively few large, industrial concerns. We are not at all the vicious lot we are pictured in his article.

Should I be inclined to quarrel or to find fault, I would call your attention in considerable detail to the

following:

1. The erroneous use of statistics in your letter. You refer to the existence of 276,500 manufacturing companies in the United States. There has been no census of manufacturing industries since 1939, and during that year (covered by the Sixteenth Census of the United States) there were in continental United States only 184,230 manufacturing establishments (with products valued at \$5,000 each for the year). Since 34,087 of these establishments were of the plural unit

type, it stands to reason that the number of manufacturing companies was much smaller than 184,230.

2. It is true that about 15,000 of the 184,230 manufacturing establishments were large (each employing 100 or more workers) and together they accounted for approximately two-thirds of the value of products produced. It is equally true that the vast majority of manufacturing establishments and companies are relatively small, and they buy as indicated in our book, on page 337

3. Even in the case of the large manufacturing companies, many of the raw materials, semi-manufactures, and finished parts (like tires purchased by automobile manufacturers) are purchased from sources of supply on contracts; such contracts are generally negotiated by high officials like the President or Vice President of the buying concern. Thereafter, the purchasing agent may determine how much to

order at any given time.

4. The steel pipe example cited in Mr. Heinritz's article is at best inconclusive. In the first place, the item is highly standardized, the sources of supply are relatively few, and the product is more or less staple. In the second place, even here, according to the results of the survey, in only 38% of the companies the purchasing department specifies the pipe to be purchased. This means that in 62% of the companies, such purchases are specified in the manner indicated on page 337 of our book.

5. It is true that there has been a tendency in the larger companies to have purchasing centralized, but such centralized purchasing has often taken the form of *coordinating* all purchasing activities and keeping records at a central point without at the same time placing full authority for purchases in the purchasing department. This statement is not theoretical, as I can implement it from personal knowledge and experience.

6. You yourself state that "In general the trend is for engineering and operating executives to specify

requirements"....Doesn't such specification often cover the products to be obtained?

This letter is written, however, for the purpose of explaining our position in the matter. Remember, please, that our *Principles of Marketing* is not a book on purchasing. For that reason relatively little space can be devoted in it to purchasing or to any other marketing function. We, too, at this institution give a lot of work in purchasing in a separate course and in no way attempt to underrate this function.

In conclusion, I reiterate that it would have been much wiser had the matter been called directly to our attention, and that your Committee on Education would do a better job to approach such matters in a cooperative manner instead of chastising and berating an author who might have made a statement which is not to its liking. Despite all these sins committed by your Mr. Heinritz, I assure you that as soon as Professor Maynard returns to the city, we shall give the matter very careful consideration and effect a revision wherever the actual facts seem to justify. Personally, I feel that it would be sportsmanlike, and the least you can do, for you and Mr. Heinritz to publish this letter in your next issue of Purchasing in order to offset the "misconceptions" which have been printed in the August issue about educators in general and Professor Maynard and myself in particular. We are really not the "bad sort" we are pictured in Mr. Heinritz's article and are only too happy to cooperate with business men and business groups.

Very truly yours, T. N. Beckman

# III. A letter

from Stuart F. Heinritz, Editor of PURCHASING Magazine, to Professor T. N. Beckman. September 9, 1947.

Copies to Professor Maynard, The Ronald Press Company, and G. W. Aljian, Chairman, N.A.P.A. Committee on Education.

Dear Dr. Beckman:

Arthur Dix has handed me your letter of August 27th. We are glad indeed to publish it, as requested, and we share with you the hope that certain misconceptions may be corrected thereby. Constructive controversy, in which both sides of a question are fully aired, is often the most effective means of arriving at objective truth.

At the outset, let me assure you that it was far from my intention, in writing "The XYZ of Purchasing", to chastise or berate educators or to picture them as a "bad sort". And let me hasten to add that the N.A.P.A. Committee on Education, referred to in the last paragraph of your letter, should be completely absolved from any suspicion of responsibility for or complicity in that article. As a matter of fact, if there was any berating, the Committee was on the receiving end. For the primary purpose of the article was to arouse them to consciousness and action in respect to one of the broader aspects of their educational

The committee has done an outstanding job in fostering specialized courses in purchasing as a part of the business curriculum, and in providing high grade teaching material for such courses. It has been less alert in recognizing that education about purchasing comes not only through the courses specifically dealing with the subject, but also to a very considerable and significent extent through the teaching of marketing, organization, and other phases of business that necessarily touch upon the purchasing function. When the teaching from these several viewpoints is inconsistent, or mutually contradictory, the result is confusion, at best, and possibly the negation of a great deal of the Committee's effort toward education in and for purchasing.

Your letter cites a very pertinent example. The Ohio State University offers a separate course in purchasing. If that course is consistent with the teaching of the marketing text, it would certainly not have the approval of the N.A.P.A. Committee. If the two courses are inconsistent, with two different concepts of purchasing urged upon the student, then we have a case of faulty educational policy. In either case, it is my belief that the Committee should take cognizance of the situation and try to do something about it.

In hewing vigorously to this line—but neither vitriolically nor vindictively, I trust—the chips have fallen where they may, upon the *Principles of Marketing*, as an example of erroneous information about purchasing. I agree with you that this would not have been the best approach if the purpose of

"XYZ" had been to correct a particular instance. The article counselled exactly the temperate and cooperative procedure that you suggest and that is so well exemplified in Mr. Dix's letter of August 20th, though apparently to little avail. Perhaps my own failure to adopt this course in the first place is, as you say, a sin. A fair analogy might be drawn about publishing a categorical statement belittling an entire area of business management without having that comment checked beforehand by competent authorities in that field, for example by the N.A.P.A.

I suggest that primary source of information, rather than our own organization, not because of any undue modesty as to the competence of Purchasing as an authority. This publication, which is entirely independent of the Association, is constantly carrying on specialized research on how industrial purchasing is done. We have developed a great deal of specific and well authenticated information, which we aggressively place at the disposal of marketing executives, and, as noted in Mr. Dix's letter, we should be very glad to make it available to you. In the larger approach to the broad educational situation outlined above, it seems to me that the official voice of the more than 10,000 purchasing agents represented in the Association might be more persuasive and convincing than the single voice of one crusading editor, who necessarily appears in the role of an advocate, albeit an honest and conscientious advocate, of the dignity of the purchasing function. To borrow your own phrase, it would be idle to contend that we have "no axe to grind". We are keenly aware that the considerable success we have achieved in this operation primarily reflects the sound metal of our subject—centralized purchasing -held firmly to the whetstone of

The basic issues in respect to any statement about industrial purchasing, such as the statement made in Principles of Marketing, are two: (1) the concentration of buying power in the relatively few large scale manufacturing units, when considering the over-all industrial picture, and (2) the concentration of buying influence in the purchasing department in a competitive economy where virtually every requirement is obtainable from alternative sources and the selection of proper sources is the very reason for having a well informed purchasing department.

An interesting distinction is made in your letter between the facts which you so ably defend, and the "actual facts" which, according to the final paragraph, might justify your consideration and effect a revision. Perhaps this is as good a basis as any on which to analyze the contentions advanced in your letter. Let's start with paragraph No. 3.

We are wholeheartedly in agreement with the first statement, contrasting the position of a purchasing agent for a manufacturing concern and the buyer for a department store or wholesale house. This defines the group that we are talking about. The purchasing agent, in the accepted industrial use of the term. buys for use or for fabrication, not for resale. The buyer for resale is outside the field of our publication, and he does not qualify for mem-bership in the N.A.P.A. Your statement, and our interest in that statement, concern the purchasing agent.

The second statement, that "in thousands of companies" the purchasing agent has little influence in selection is also a fact. It would be equally true to state that in thousands of companies the purchasing agent is the dominant factor. For the word "thousands" is a meaningless and misleading term for generalizing about a field numbering some two hundred thousand companies, more or less. You might as

well say that "thousands of Americans are dishonest" or that "thousands of Americans are honest" both statements are fact, but what a damning and misleading picture of the American character either statement would present!

The actual fact is that the position of purchasing agent rarely exists in companies having less than 100 employees or an annual production valued at less than a halfmillion dollars. When the relatively small number—5% to 10%—of large concerns is eliminated from your generalization, as you yourself suggest, you have eliminated the whole field of the purchasing agent. It is scarcely accurate or fair to derogate a function for lack of influence in a sector of industry where it simply does not exist. If this statement were to be rephrased while still retaining a reference to the purchasing agent, it would be better to say: "In more than a hundred thousand companies the purchasing agent has little influence, because these companies have no

purchasing agent."

The third statement, that large concerns are often highly integrated, is also a fact, though the particular form of vertical integration described has been neither popular nor prevalent since the 1920s; it passed out of the industrial picture largely because your corollary statement represents wishful thinking that did not work out as a fact. Management learned that purchasing has to start somewhere before interplant transfers can be made, regardless of how far back you go along the supply line. The manufacturing concern that acquired a foundry did not solve its purchasing problem nor reduce the importance of purchasing; instead of buying one item-castings-it had to buy sand, pig iron, pattern materials, and all the varied equipment and supplies needed for foundry operation.

The actual fact is that for the past ten years, industrial integration has been predominantly in the opposite direction, following one of two patterns: further fabrication to provide additional outlets for its product, so that in effect the company becomes its own best customer, or diversification of operation and products under a centralized administrative organization. Neither of these plans reduces the importance or significance of purchasing.

Now we come to the six numbered paragraphs of your letter, in which you raise specific issues.

1. It is a fact that there has been

no census of manufacturing industry since 1939, when 184,230 manufacturing establishments were reported. In purchasing and publishing, we cannot do business on the basis of statistics eight years old; I should assume that this is also true in marketing and education. The actual fact is that current information is available in the Social Security Administration from monthly tax withholdings and that the Department of Commerce regularly issues an estimate of the number of manufacturing companies, based on this information. If you will refer to the May 1947 issue of the "Survey of Current Business" issued by the Department of Commerce, you will see that the estimated number of manufacturing businesses as of March 1947 was 276,500, the figure quoted by Mr. Dix. Furthermore, in these reports, every company is counted only once, whether it be a one-man print shop or the General Electric Company with more than 100 manufacturing establishments; consequently your discounting for plural establishments no longer "stands to reason". If you are correct in your contention that the 1939 census figures still apply, then the calculations of the Department of Commerce economists show an error of approximately 50%, or the Social Security Administration is collecting wage withholdings from some 90,000 companies that do not exist, which is a good trick if you can do it, or a proper subject for Congressional investigation. The "erroneous use of statistics" of which you accuse us consists merely of using current figures instead of obsolete ones.

Mr. Dix recently visited the SSA headquarters in Baltimore and obtained some further data of a highly useful nature on the number of manufacturing plants. SSA has the basic data available, and while sufficient funds have not yet been appropriated to put these figures into suitable form for the use of industrial marketers, oreliminary computations have been made that are capable of analysis. An article by our Director of Research, published in the June 1, 1947, issue of Sales Management, appraises recent changes in industrial markets on the basis of these current employment figures. estimate based on the most reliable current statistics shows 19,600 manufacturing plants with 101 or more production workers, as compared with 15,416 such plants in the 1939 census. This is an increase of 27%. It would seem that current, postwar statistics are essential for

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sound marketing in determining the market in terms of what the National Industrial Advertisers Association calls "plants large enough to reward sales effort."

2. On the basis of 1939 statistics, it is a fact, as you state, the approximately 15,000 of the 184,230 manufacturing establishments accounted for 2/3 of the manufactured value of products produced. The dollar value of purchases would be approximately in the same proportion. Numerically, your claim as to the buying habits of the "vast majority" of manufacturing companies might be sustained. The actual fact is that sales volume and market potentials are measured in dollars, not in number of customers. As an accurate marketing guide, therefore, the statement should be qualified to read: "The vast majority (representing 1/3 of the market) buy as indicated in Principles of Marketing; the small minority, where centralized purchasing is in effect (representing 2/3 of the market) are exceptions."

3. It is a fact that key materials used in large quantities are purchased on contract. The actual facts are that where purchasing authority is vested in a purchasing department, contracts are a responsibility of the purchasing agent, that Vice Presidents making such contracts are generally the Vice Presidents in Charge of Purchasing, and that in many cases company Presidents have no authority, legally, to commit the company on purchase contracts. There is plenty of precedent in large organizations for withholding payment on orders placed by "high officials" because of purchasing irregularities; of course this does not apply to the small company or the owner-manager type of organization, where all delegation of authority is on a limited basis. The one general exception, and it is an important one, is among industries whose operation profits, and competitive position depend in large part upon a single raw material, usually of a speculative market nature, such as cotton, leather, or tin, since speculative policies do not come within the province of the purchasing department. Even in respect to this general exception, the implication is not warranted that such buying is usually done by Presidents and Vice Presidents. In commodities like wool, tobacco, meat, and food crops, it is typically the responsibility of specialist buyers, though outside the purchasing department.

4. It is a fact that the steel pipe example cited in "XYZ" is not con-

clusive. No single survey on any particular product is conclusive. though it may be thoroughly representative. We have dozens of surveys that might have been presented instead of or in addition to the one selected. This particular one was used because it comes from another. in fact from a competitive source, so that there could be no possible suspicion of "axe grinding" on our part. The actual fact is that in interpreting this survey you have entirely ignored the finding that there is no brand specification in 96% of the purchases and that selection of brand is done by the purchasing agent in 95% of these cases. The influence of the purchasing agent is therefore properly rated as 38% of 2% plus 95% of 96%, or 91.96% of the total. According to this survey made by The Iron Age, the combined influence of engineering, production, maintenance and administrative men in "determining what brands shall be purchased" is 62% of 2% plus 5% of 96%, or 6.04%. In respect to the steel pipe example, therefore, the statement in your letter should be modified to read: "In 6.04% of the companies. such purchases are specified in the manner indicated on page 337 of our book.'

It may be helpful at this point to present the results of another survey, especially since your state-ment embraces what "salesmen of industrial lines have long since learned". It would be idle to claim that in the case of all products used in industry, the purchasing agent is the only man who needs to be sold. Selling to the industrial market is not that simple. To get current, unbiased information on this point, we recently conducted an investigation among industrial distributing houses, using a list selected at random from the Directory of Industrial Distributors, published by Mill Supplies. As you know, the distributing organization is a common channel of marketing all sorts of equipment, materials, and supplies in the industrial field. Such a company may have as many as 3,000 or more industrial customers. Our line of investigation has evidently paralleled your own.

We asked them to tell us how their salesmen's time, in selling to the big manufacturing establishments, is divided among the various executive groups. Sixty-five of them replied. The composite practice reported in these replies is as follows:

General Management 13% Manufacturing 34%

Purchasing Salesmen's earnings depend upon the effective use of their selling time. They have long since learned that they eat only when they sell. I think you will agree that it is fair to assume a significant relationship between the amount of time a salesman finds that it pays to spend with a particular executive group and the buying influence exerted by that

5. It is a fact that coordination and record keeping are necessary in the operation of a purchasing department. The actual fact is that these routine functions are carried on to implement the larger responsibilities of buying. In our issue of August 1944 we published a record of 1,248 manufacturing companies, with three million dollars average annual purchasing expenditures; in 1,184 of these, or 94.9%, the purchasing department has full responsibility for selecting the sources of supply. We believe this to be typical of the field of large scale industry and purchasing. This does not question the contrary examples you may deduce from personal knowledge and experience. We are well aware that not all purchasing is at the same high level. Only a few weeks ago, in a public conference, Arthur G. Pearson, Director of Purchases for the American Meat Institute, Chicago, stated: "If we are to be honest with ourselves, we must recognize that purchasing today is organized and operates at many levels in busi-A good deal depends on ness. with whom you talk. If it would serve any useful purpose, you and I could sit down together and match examples. I'll put these 1,184 companies into evidence as a start, with their 31/2-billion dollar annual purchases, and we can go on from there. Mr. Pearson continues "Management is insisting that the purchasing department carry its share of executive responsibility. Business leaders have no patience with the purchasing agent or purchasing department that does only the work that any errand boy might That is the direction of purchasing development over the past two decades, steadily gaining mo-

6. In conclusion you ask whether the specification of requirements by engineering and operating executives doesn't cover the products to be obtained. The answer is "No". Since the purchasing agent buys for use, the purchasing program is determined by the requirements of the operating program. In that (Please turn to page 350)



The placing of four carriage bolts adapts the container to every size and type of product



The unit is firmly bolted into place on the base; built-in skids are part of the design



The wirebound wrap-around sides of the box, stored flat before using, are put into place

I F money does talk, it can tell an interesting and significant story about the shipping room of the Homelite Corporation of Port Chester, N. Y., manufacturers of portable gasoline-driven generators, pumps, and blowers.

It is a story of \$8,700 saved every year. That figure, according to company officials, represents the economies effected simply by a change of shipping containers in an all-out standardization program.

The company now uses just one specially designed wirebound box adaptable for either domestic or export shipment and for any of its various sizes and models of product. By eliminating the necessity of having several different sizes and types of containers on hand, this factor alone effects savings that cannot be computed.

The wirebound box that was engineered for the Homelite Corporation was displayed in the packaging contest conducted in Chicago last April by the Industrial Packaging Engineers Association of America.

# ONE CONTAINER FITS COMPLETE LINE

Standardization is carried to the ultimate degree in this company's packaging policy

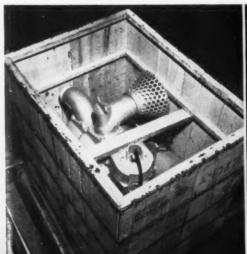
By G. Cornwall Spencer

That competition, incidentally, was won by a wirebound crate, in competition with shipping containers of many types and materials.

Data accompanying the Homelite box estimated the yearly savings accomplished through its use as a round \$8,700—\$4,300 in the cost of containers, \$1,800 in freight charges through lighter weight, and \$2,600 in shipping room labor. The savings due to standardization are in addition.

In comparison with the shipping container previously used by the Homelite Corporation, the wirebound box reduced the container or tare weight from 80 to 55 pounds, the number of pieces in the container itself from 15 to 9, and the cost of the container by about 8%. It provided a sturdy protective container easy to assemble, easy to handle after packing, easy for the customer to un(Please turn to page 348)

Internal bracing is accomplished by inserting one wooden strip between the closed sides The package is completed for shipment by putting on the box top and fastening it with nails Here are several different types and sizes of product, stacked three-high in identical boxes









General view of the purchasing office at the Chicago plant. Bruno Wenton in foreground, K. T. Kennison in rear.

### How JAS. P. MARSH CORPORATION Buys

Sound policies, good vendor relations, simple routines that keep materials moving according to schedule, are the principles that have proved successful in this rapidly growing department

• By William Goettler



Philip Keppeler

PURCHASING AGENTS, always ready and eager to exchange ideas in order to improve their own performance and to help each other increase the efficiency of buying and routines, have it within their capabilities to exert an even more significant influence on the general business situation. For example, extending this sort of cooperation and observing a sound and consistent purchasing policy, has been mighty effective in combatting the recent "grey" markets in steel—really blacker than Hades in spots—and in stamping out this pernicious condition.

"My company has bought steel only at regular prices," said Philip Keppeler, Purchasing Agent for the Jas. P. Marsh Corporation, Chicago manufacturer of industrial instruments. "Many other reputable concerns have stuck to the same principle. If all buyers got to-

gether, we'd quickly be able to end such rackets, as when steel was being sold at two or three times the list price.

"The steel situation has been something of a mystery," he continued. "It isn't in the warehouses; purchasing agents have made sure of that. Yet stories are heard that one can buy carloads of it from a stranger in some hotel room or at some bar."

He explained that the Marsh Corporation and other companies with established sources of supply can obtain enough steel for their needs, but that many new manufacturers, or those who "shopped around" before the war, are encountering short supplies.

As early as last spring, buyers were of the opinion that six to eight months of uninterrupted production should definitely end the shortages of both pig iron and steel.

Even then, buyers were regaining the upper hand, and were in a better position to resist the "grey" market prices. Salesmen have again taken to the road, soliciting orders for brass castings. Even iron castings -which were the bottleneck for a long time—are obtained much more easily, despite the continued shortages of pig iron.

One of the confusing aspects of recent market conditions has been their unevenness. Steel strip, for example, is "still tough"; but steel bars are "not too bad". Steel rods also are in better supply, except in the small sizes. However, brass Bourbon tubing, used extensively in instrument manufacture, remains a scarce item. It is supplied by only three companies in the United States, and must be bought more than a year in advance. Glass supplies are definitely ample, but the fractional horse-power motors used in one Jas. P. Marsh assembly are still in extremely limited supply. Although manufacturing twice as many motors as before the war, one manufacturer, it is reported, is a year and one-half behind on orders.

made its contribution to industrial stability by endeavoring to contract contracting in turn to deliver its own products at current firm prices wherever orders are acknowledged and invoiced for shipment within the year. Early in 1947, the following letter was mailed to all suppliers:

We have advised our customers that all orders which have been accepted and which are to be accepted by us for delivery prior to December 31, 1947, are on a firm price basis.

We feel that in taking this step we are contributing our part toward an early stabilization of prices and a return to a common sense way of doing business. As one of our suppliers, we are in

turn asking that you accord us the same terms by withdrawing any escalator clauses applying to our unfilled orders and omitting same on any future quotations or acknowledgments of our orders.

In the event that we cannot agree to the above, we then ask that you accept our orders containing the following con-

ditions:
"The Jas. P. Marsh Corp. reserves the right to amend, cancel, or postpone de-livery of this order at any time before 30 days of requested or acknowledged shipping date.

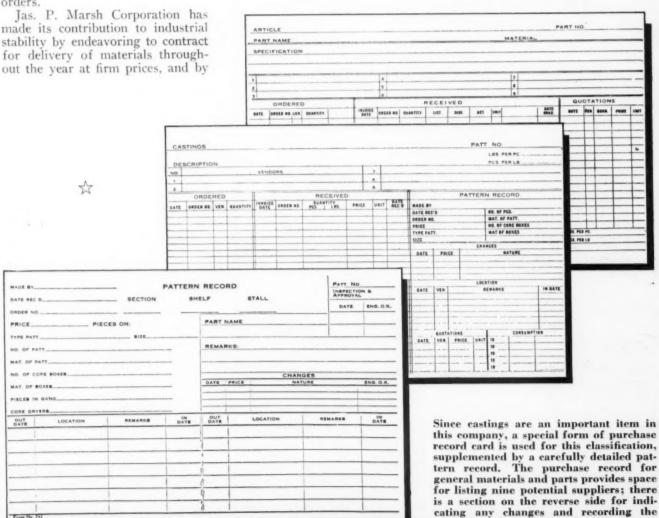
Because of the uncertainty of delivery of many critical items entering into pro-duction of our products we must also insist that no deliveries be made ahead of our shipping schedule except with our specific written permission.

We would appreciate receiving your response to the foregoing.

In response to this letter, practically all suppliers indicated a high respect for the policy proposed by Mr. Keppeler, and the majority of them assured the Jas. P. Marsh Corporation of firm prices throughout the rest of the year. Only those who themselves cannot be certain regarding future costs of their own raw materials have been unable to contract to make their deliveries at current firm prices.

"If enough of the small and medium sized companies, following the example of a few large corporations, apply pressure to get the ball rolling, the great bulk of industry will see the light, and we shall eliminate, as far as that is possible, the danger of worse inflation," Mr. Keppeler declared. "Especially with danger of new price upheavals in the picure, it is up to each one of us to stick to a firm price policy."

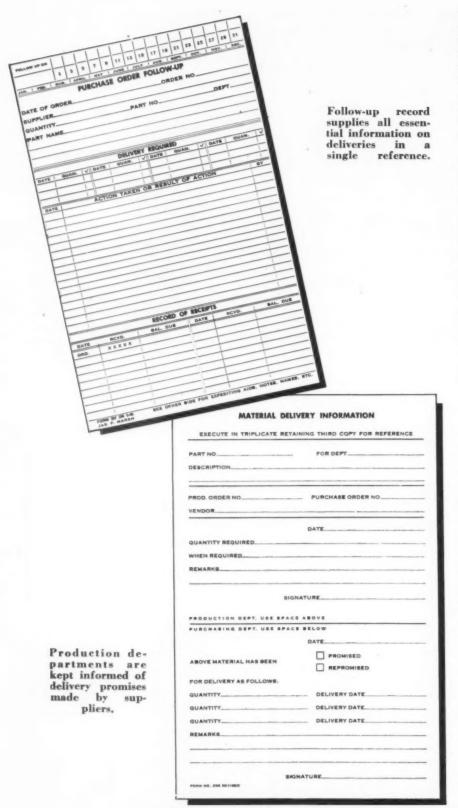
The Jas. P. Marsh Corporation



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yearly consumption of each item.



pursues this policy, despite the fact that it cannot keep abreast of its own current orders.

Mr. Keppeler is one of those who have consistently held that there is little possibility of a serious business recession, at least for several months to come, even though most

materials should be in ample supply by the end of this year. From his vantage point as a buyer, he has the opportunity of appraising markets not only through his own observation but also through his contacts with the industries from which he buys.

"On a recent trip contacting suppliers in the East," he said, "I found that most of them did not anticipate a business slow-up of any importance within a year. There naturally have been some cut-backs and order cancellations, but not in a volume sufficient to cause worry. Most industries, it seems certain, will find a wide outlet for full man-

ufacturing capacity.'

Mr. Keppeler values these contacts. Even though supplies are becoming less of a problem, he continues his policy of seeing all salesmen who call and letting them tell their story. "The purchasing agent, like the salesman, needs to make as wide a field of contacts as possible," he said, "and seeing salesmen is one way of extending acquaintances. Salesmen help keep one posted on what is going on outside of one's They continually own business. present new ideas on improved processes and materials. Furthermore, salesmen represent firms that may be potential customers of ours. We give them the same sort of reception that we want them to accord to our own salesmen."

He stressed the human factor in business. For example, salesmen who continued to call at the Marsh Corporation in order to retain their friendly relationships, even when they had no goods to sell, will get more consideration when supplies become plentiful, than those who dropped their contacts completely

during that period.

Mr. Keppeler is continually trying to simplify the routine of purchasing and records, so that it is possible for anyone without previous experience in buying to handle the necessary clerical work.

One development that has streamlined purchasing in this company is the card index with purchase follow-up data. Formerly the purchasing assistants had to retain a considerable mass of orders on their desks. The follow-up index, however, makes this information avail-

able in condensed form.

These cards show the date of the purchase order, the supplier's name, the quantity, part name, part number, order number, and the department for which the purchase is made. The dates on which the buyer or expediter should follow-up the order are indicated at the top of each card. Space is allowed, also, for listing of dates when delivery is required, and recording action taken and result of action in obtaining A record of receipts against the order completes the information. Thus, if there is any

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question in regard to the progress of an order, it can be answered by a glance at this index.

Material delivery information sheets, which are auxiliary to the follow-up system, are executed in triplicate for reference in various departments concerned with a particular purchase. Besides indicating the total quantity of an item or material ordered, these sheets show the delivery date "promised" and "repromised" for various quantities of the item on order.

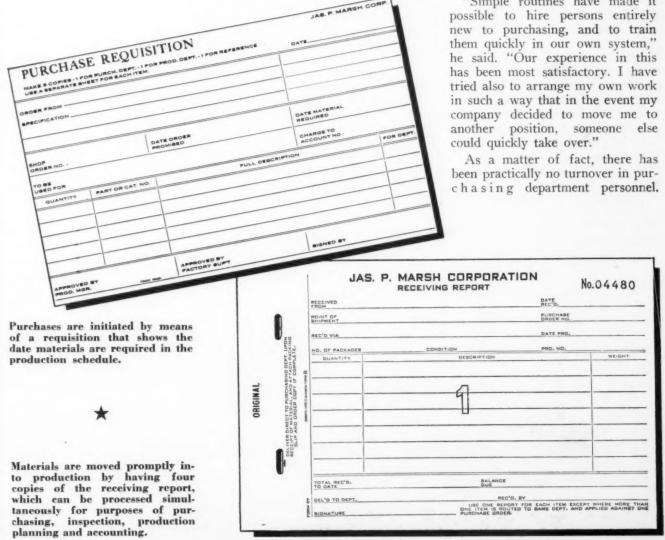
"Promises regarding delivery by a supplier are noted on the card,' Mr. Keppeler explained. "If he should indicate March 1, we mark it on the card. Then if delivery in the quantity promised is not made, or if any mistake occurs, we can call the supplier with all information at hand to show just what had transpired previously. He cannot claim that the contemplated delivery date was at some later time. Usefulness of this index will not end with abundance of materials and more dependable delivery dates. Its convenience will compensate us many times over for the little additional clerical work it involves."

The Marsh purchasing department uses two different forms of purchase record cards. One of these is specifically for castings, and the other is used for the variety of other materials bought. The former presents at a glance all essential regarding information equipment, so that a buyer does not have to refer to other records. It indicates, also, any change made in specifications since the previous time a casting was purchased, and gives the reference number to any engineering alterations. Purchase record cards list not only the current vendors, but those from whom quotations have been obtained. They present, too, the records of past purchases.

Receiving reports are made out with four copies. The original is retained by the purchasing department, where it is attached to the invoice and put through for payment. The second copy goes to the inspectors, who stamp it and forward it along with the material. The third copy is sent to the production department immediately on receipt of an order, so that there is no lag in notifying the proper department that the material has been received at the plant and will soon be received from the inspectors. The fourth copy remains in an alphabetical file for a short time for reference.

Such simple, thorough organization eliminates any possibility of an interruption in the functions of the department. Many companies confronted by a shortage of personnel, or by upset routines at vacation time, might take a suggestion from a purchasing department where these difficulties have been largely eliminated.

"Simple routines have made it possible to hire persons entirely new to purchasing, and to train them quickly in our own system,'



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Bruno Wenton, the department veteran, has been with the Marsh company for twenty years, while M. T. Kinnison, who came to the job with no previous experience in purchasing, has been with the de-partment five years. The two clerical assistants, Winifred Nowak and Leona Broeski, have been employed there since their graduation from high school, eight years and four years ago respectively.

The work assignments are divided between the two buyers according to their experience. Mr. Wenton, thoroughly familiar with past operation and requirements, handles brass and iron castings, steel, and subcontracts. Mr. Kinnison purchases the variety of other needs. Mr. Keppeler makes it a rule to handle the original contracts with suppliers, but when a source is established he turns over the actual buying responsibility to one of his associates. Buying complications during the war made it necessary at that time to employ three expediters, a priority clerk and his stenographer, and several additional girls for special clerical work.

Mr. Keppeler keeps in close touch with the details of the purchasing porgram, and definitely knows what is going on, though he does not permit the details to monopolize his time. He maintains plenty of checks on purchase orders and commitments to insure the minimum possibility of error. Every order starts on his desk, and ends there. He looks over all requisitions for production departments and passes them along to the buyers. Unless he is away from the office, he personally signs all orders, whether large or small.

Purchasing for the Jas. P. Marsh

Corporation was not complicated by a change in product during the reconversion period. The company manufactures pressure gauges, vacuum gauges, thermometers, temperature controlling devices, and heating specialties including radiator valves, traps, and air vents. One item particularly in demand is the gauge for pressure cookers. company made similar devices for naval vessels and camp installations during the war, and had only to make certain changes in specifications for peace-time manufacture.

When Mr. Keppeler came to the Marsh purchasing department twelve years ago, he was totally inexperienced in buying. His record is a practical demonstration of "onthe-job training", and a goodly part of that training was selfdirected. At that time the department consisted of only one man and a stenographer. There was a single file which gave a sketchy record of previous transactions. It contained a disorganized mass of all correspondence, copies of old orders and invoices, and general quotations. There was a purchase record card system, but it lacked uniformity. The conditions were not unlike those confronting many young purchasing agents today in small and medium sized businesses.

The first problems in systematizing the purchasing routine were to set up a uniform card index, and to establish uniform specifications in ordering similar materials. Elementary as it may seem now, it was a major step to get the part number in the same position on each card. According to his suppliers, many companies still haven't thoroughly organized their systems of filing and ordering, and doing business under those circumstances is more difficult and far less efficient.

Purchases of the Marsh Corporation in 1935 approximated only \$8,000 a month, but during Mr. Keppeler's twelve years as purchasing agent these have increased to the point where they now exceed \$100,000 each month. Some 500 persons are employed by the com-

The company is now in process of moving to a new building in Skokie, Illinois, occupying a fiveacre tract in the suburban area northwest of Chicago. Prior to this, the plant operations were housed in a half-dozen buildings in the congested industrial district of Chicago proper. With no room for normal expansion, the company had been forced to carry on more and more of its manufacturing in various other buildings throughout the neighborhood, wherever space happened to be available. At the new plant, all receiving, manufacturing and shipping units are efficiently laid out in logical and efficient sequence on one floor.

As a manufacturer of heating equipment, the company will use its own building as a "guinea pig" for extensive research on heating methods and heat control. Also, latest improvements in air conditioning, sound proofing, and lighting are being incorporated. The company selected a location free from industrial smoke and grime in order to assure healthful working conditions. Other factors that determined location were adequate transportation facilities, nearness to the material supply markets of Chicago, and a central location in an area that would provide the high calibre plant personnel required in the manufacturing of instruments and heating

equipment.

Jas. P. Marsh Corporation's new plant at Skokic, Ill.





Revised conditions of sale in the Federal surplus property program eliminate some of the buyer's risk, but they do not relieve him of the basic responsibilities that are inherent in every purchasing negotiation

By Howard Rafferty

IN the early days of the Federal surplus property program the government made a sincere effort to enforce the time-honored "as is, where is" clause of the regulations.

But when the flow of surplus merchandise from the army and navy swelled into flood proportions, after hostilities ceased, it quickly became apparent to operating officials that the Government's traditional method of selling property required modification if legitimate buyers were to be attracted and drawn into the program. For under the stress of wartime conditions, many errors in packing, inspecting, and labeling items had occurred, which brought grief to buyers who in good faith had bid on the basis of advertised listings.

To speed the flow of surplus property into a market devoid of many products, customary inspection of property before selling was reduced to the "spot check" method. This meant that where an inspector faced a problem of inspecting one hundred packages in, say, a week's time, he would make a "spot" inspection of perhaps one out of every ten or fifteen containers, thereby getting through with the job in a matter of hours.

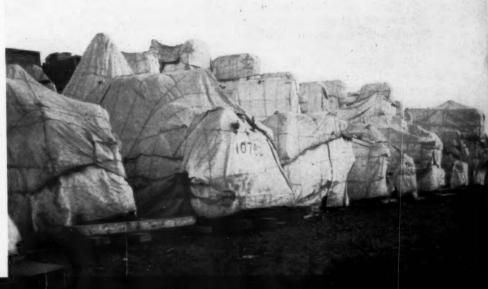
By cutting down on the time required to inspect, document, advertise and display, enormous inventories were speeded into the hands of commercial buyers and thence to consumers in a small fraction of the time that would have been consumed had orthodox methods been followed. However, this speeding up process brought along with it an inherent chain of errors in property description and shipments

which made the "as is, where is" condition of sale untenable on the part of Government.

It was at this point that the socalled "equitable adjustment" clause was inserted in the standard conditions of sale. Buyers who felt they had been misled by government advertising, or who received merchandise other than as described, were given the privilege of filing a claim for an "equitable adjustment". They were no longer bound rigidly to the "as is, where is" condition which in the past had effectually barred any claim against the Government on the ground of misrepresentation.

An immediate upsurge in the volume of claims filed with the War Assets Administration resulted, as buyers who theretofore had "taken the rap" on irregularities in shipments began to shift the burden back on to the government. It was no longer a case of mandatory inspection before buying. Bidders on surplus property were enabled to go ahead on the basis of advertised listings, confident that Government would live up to its offerings or

The surplus buyer's dilemma: What is it? What condition is it in?



effect an "equitable adjustment".

Obvious errors in shipments, shortages, etc., have been placed in the "automatic refund" class, and claims falling within the scope of such a classification constitute a minor problem. The real headache, for those responsible for adjusting claims under the equity clause of the regulations, is that type of claim based on condition of property.

Time and again reviewing officers face the problem of adjusting the price on used property, originally advertised under the condition code symbol "O" (indicating usable without repairs) which turns out to be badly in need of repairs upon delivery. Were complete pre-sale inspections practicable, such errors could be avoided. Under the spot check method, claims for adjustment naturally follow where Army or Navy markings prove to be at variance with the actual condition of property received.

Another prolific source of claims is use of the word "unused" in advertised property descriptions. The ordinary conception of an unused article is one in "new" condition, and such a premise is the foundation of commercial transactions. However, in the surplus property program, conditions of storage by military activities oftentimes render "unused" property anything but "new". Articles stored for long periods in the open, even when covered by tarpaulins, are bound to be affected by weather conditions. Buyers, relying upon the commercial interpretation of "unused" as being synonymous with "new", insist upon Government consideration of their claim for equitable adjustment when the merchandise delivered proves to be weatherworn.

On technical grounds, the Government's standard conditions of sale provide a firm foundation for rejecting claims of the foregoing type. However, in the absence of complete descriptive advertising, it is difficult to arbitrarily reject such a request for adjustment, especially when the transaction is of the fixed-price type.

A fixed-price sale of surplus property is commonly accepted throughout the country as indicating that the property being offered is in new or good used condition. And this premise provides logical ground for adjustment of claims which cannot be ignored.

The sale of surplus property by sealed bid or competitive "spot sale" methods automatically weakens the position of a claimant seeking re-

dress by means of the equitable adjustment clause of WAA standard conditions of sale. Such property has usually been previously offered at fixed price, and is more or less in the residual class. Buyers are urged to inspect property before placing bids, and the premise above mentioned, applying to fixed-price sales, does not operate in the speculative atmosphere of competitive bidding. "Let the buyer beware" is the ominous warning hung over such transactions, and regular surplus property buyers might well give some time and study to the Government's standard conditions of sale before submitting bids.

Special instructions accompanying every sealed bid invitation should also be carefully read by prospective bidders. One outstanding point in the instructions is the deposit clause, inaugurated early this year to stem the flood of defaulted sales which followed the slight recession of last winter. Legitimate buyers who can establish their credit integrity are absolved from this requirement, and this is no small matter to those dealers operating on a national scope. Bank fees, and loss of interest on deposit checks held for extended periods by the Government, mount up into siz-

able figures.

Buyers who have run foul of the Government's recently started procedure with respect to defaulted sales, should give especial thought to the information contained in advertised sale conditions and instructions.

After all, it must be borne in mind that the Federal Government is not a private corporation, and its operation of the surplus property program is controlled by basic laws and regulations which interpret the will of Congress. Political factors enter into the administration of the surplus property law, and the public interest demands operating steps which no private enterprise is compelled to take.

Because of these conditions, buyers who have deliberately or unintentionally found themselves in the classification of defaulting bidders should read carefully those instructions and sale conditions touching upon their status.

For, while the surplus property program has moved a long way from the original "as is, where is" stage, the famous "equitable adjustment" clause of War Assets Administration general sales condition carries with it the clear implication that equity in operation applies both ways-to the Government as well as to the buyer.



. . and whenever he isn't saying 'No' to a salesman, he's trying to get me to say 'Yes'.

## THE PURCHASING FUNCTION

## IN ADVERTISING

• By J. B. Lalley

WHO should do the buying for the Advertising Department? Here is a subject that has been, at one time or another, a point of controversy in every industrial organization. It is high time the matter was settled, once and for all. And it can be settled, too, just as soon as each of the warring sides realizes that the other has strong rights in the matter.

This battle for supremacy dates back through the ages. The first outbreak occurred when an Advertising Man had a hot idea he wanted to get across to his tribe. Rather than wait for a stone tablet to be brought in, he chiseled his message on the cave wall. This upset the Tribal Procurement Man no end. He grumbled, as he viewed with disdain the mess that the ad man had made, "I don't know why you couldn't wait for me to get you a nice stone tablet, instead of botching up the walls with your silly pictures."

"You", said the ad man, "wouldn't know a good piece of stone if you stubbed your toe over it. Besides, your deliveries stink." Whereupon he put the finishing touches to his masterpiece.

History obscures the outcome of this first engagement. Probably it ended in a 'no-decision', for the differences are with us to this day.

Some firms have taken the easy way out. They have divorced Purchasing completely from Advertising, letting the latter go its own merry way without any policing or supervision . . . or any help from Purchasing.

Other concerns are reluctant to take such a step. They have brought about harmony . . . on the surface, that is . . . through official proclamations. They have outlined the rights and the obligations of both the Advertising and Purchasing Departments. But below the surface of official instructions, the lusty battle still rages unabated. Advertising and Purchasing men are perpetually at one another's throats, neither is willing to admit that the other has a leg to stand upon.

Let's get down to cases and smoke out the fundamental points of disagreement. Let us see what can be done to correct them.

First of all, we will take a look at the Purchasing Man. The part he plays in the corporate organization is to get materials into the plant quickly and economically. Management feels, and rightly so, that Service Departments are necessary for the successful operation of any large industrial organization. Economical operation is impractical otherwise. Furthermore, the specialist in procurement ought to do a better job at it than the fellow for whom buying is a side-line. This is fundamental, and where a large volume of buying is to be done, a specialized Purchasing Department should do it—all of it. There is no valid argument against a Purchasing Department, unless, of course, you ask the Advertising Production Man.

His answer is usually, "Nuts! If I can't get better buys than any Joe in the Purchasing Department I'll go back to proof reading." The Ad Production Man is, by the very nature of his job, a buyer himself. He is a very specialized type of buyer, an authority on prices, sources, services, and countless other functions which go into the making of a good buyer.

Often as not, the Production Man has learned his trade in an advertising agency. In an ad agency the Production Man is actually the Purchasing Agent. Here it is his job to consult directly with suppliers, obtain bids, and direct materials and services into his organization.

Naturally, any curtailments, real or fancied, placed on the Production Man result in loud squawks and lusty beefs. We can take time out at this point to bow our heads in pity for the poor fellow. He does have rough going. His boss, the Ad Manager, holds him personally responsible for all phases of a job, beginning from the typed manuscript, and progressing through all the stages of art, type, plates, printing and delivery. The reward for a

Production Man who handles and delivers a quality job on time is another job—with a smaller budget and a shorter deadline. Some Purchasing Agents have had a similar experience.

So, from the Production Man's point of view, any interference he encounters, any obstacles which prevent him from keeping his work on schedule are as painful as jerking his teeth out with a pair of gas pliers.

Our friend, the Production Man, has a strong defense against any delays and so-called 'obstacles' by the Purchasing Department. This defense is an attack on organized buying methods. He feels that because of his knowledge he can always get a better buy than the Purchasing Man. This belief he proclaims loudly on every occasion and to every listening ear.

Now, while this frustrated Production fellow has a job to do, so has the Purchasing Department representative. Every commodity and every service has a true price and a normal delivery cycle. Of course, anyone can better any price or any delivery if a special occasion warrants. A buyer can pay better than real value at times. He can dispense with specifications and quotations, also, when circumstances dictate. But he cannot keep up these practices forever, or the law of averages will clip him from the rear

It costs just so much to do a buying job. It takes just so much of a buyer's time to make an efficient purchase. Naturally, the more time and effort a man spends on one particular deal, the better will be his results—and the less time and effort he will have for the balance of his deals. There is a maximum of effort beyond which it is not economical for a buyer to operate.

This 'break-even' is totally lost to most Ad Production Men. To a man, they firmly believe they can 'muscle' any and every job they handle at better than Purchasing Department prices. But add up what this 'muscling' costs the com-

(Please turn to page 354)

## HOW WE FARE UNDER FAIR TRADE

• By A. N. Wecksler

The buyer's interest in honest sales representations and open competition is safeguarded by FTC regulations

A MIXED chorus of glee and nostalgia greets the return of competitive marketing. The buyer recognizes that normal conditions, so long talked about, are beginning to assert themselves. The seller would like to know where it all will lead.

Generally, there is a feeling that a return to the law of the jungle in business would be bad for both buyer and seller. The problem is to retain a maximum of competition within certain rules of fair trade.

There is nothing new in the term "fair trade". In the past, the Government has moved spasmodically into various segments of trade, with the intention of stabilizing or regulating activity. There have been moves against monopolistic prac-

tices — which reduce competition; then again, rules have been adopted curbing competition when developing business practices became too sharp.

Behind all these moves is the shadowy big stick wielded by President Teddy Roosevelt in the heyday of his trust-busting. Currently, the big stick is being brandished against those responsible for high prices. Obviously, many of these moves in the past and in the present have been for public consumption, rather than for individual prosecu-

On the other hand, there have been developments which are bringing more and more order to the market place. Where shillelaghs have failed to break unfair practices, conferences are showing a

degree of success.

The conferences are held among the various factors in an industry to determine what is unfair, and what should be considered fair standards of business. The Federal Trade Commission conducts the conferences, and makes the rules on the basis of industry suggestions. This commission has been recognized as the Federal Government agency which is to act as the protectorate over the nation's business morals.

Thirty-odd years ago, the FTC was set up under a law that stipulated that "unfair methods of competition in commerce are hereby declared unlawful". It has been a long road from that simple statement to a workable method of determining what is to be considered "unfair".

Actually, the term "unfair" is so nebulous that in many cases its determination borders on opinion rather than on law. Nevertheless, the FTC has developed an effective means of policing fairness. The Commission permits the tradesmen themselves to set up the rules of fairness, in a Trade Practice Conference in which all parties at interest may participate.

Purchasing agents, who in the past have been confused by trade terms used loosely by a seller, can come into a Trade Practice Conference and air their complaints. The Trade Practice Conferences have been held for more than a decade, and from these conferences trade practice rules covering 160 industries have been developed.

During the war years, there was a sharp de-emphasis of competition in the nation's business, and FTC activity receded far into the background. Reflecting the current reemphasis of competition, the Commission is again actively pursuing standards of business ethics.

The yardstick being used to determine the element of fairness in business practice is: a practice may be unfair because characterized by deception, bad faith or fraud, or because of the element of oppression which it may contain, or because it is against public policy as having dangerous tendencies to hinder competition or create monopoly; it may be unfair because opposed to good business morals, or it may be unfair because of a capacity or tendency to injure competitors, directly or through deception of purchasers.

Obviously, the yardstick is general, and to apply the measurement against a specific industry requires a full review of the practices and customs of the industry.

In the past, the Trade Practice Conferences were held for an industry by the FTC upon the request of an individual or group representative of the industry. The FTC also can initiate such conferences on its own, and officials of the Commission indicate that they plan to start conferences in such industries where there are buyer complains of unfair practices.

When the Commission authorizes a conference, public notice is given of the time and place of the meeting, and all parties at interest are permitted to present their view-

Henry Miller, Director of the Trade Practice Conferences, who umpires the differences among industry spokesmen who gather to establish fair trade practices



Trade practice rules are proposed, and the industry and consumers can present their views, suggestions and objections at a public hearing.

An example of this procedure as it applies to a product which is purchased by most purchasing agents is office machinery. FTC is in the process of issuing Trade Practice rules for the office machine marketing industry.

Objective of the rules as stated by the FTC announcement of the public hearings is as follows:

"A primary purpose of the proposed rules is to provide for the elimination and prevention of harmful trade practices that the business of the industry and trade may be maintained on a high plane of ethical and fair competition, thus affording protection to the industry, trade, and the public.

"Various advertising and selling methods which are productive of deception of purchasers, either by reason of false or inaccurate description of the products or their utility or capabilities, or by reason of concealment of facts relating thereto, are covered in the rules.

"Included are provisions setting forth acceptable requirements for use of the terms 'New', 'Demonstrator', 'Factory Rebuilt', 'Rebuilt', 'Remanufactured', 'Reconditioned' and 'Overhauled' as descriptive of typewriters and proscribing the misuse of such terms with respect to any industry product. Likewise, selling methods and practices which interfere with free and open competition and unduly hinder access to dealer outlets are defined and proscribed. Inhibitions are also included regarding many practices recognized as substantially lessening competition and tending toward monopoly.

To accomplish this purpose, the proposed rules make clear that certain practices will be considered in the nature of a deception. The rules go into the marketing practices in the office machine industry—setting up standards under which the machine is to be sold as "new", and how it should be labeled; and what should be the conditions under which machines may be sold as "demonstrator", "factory rebuilt", "rebuilt", "remanufactured", "reconditioned", and "overhauled".

Each of the descriptions denotes specific standards of quality or overhaul procedure, and this tends to protect the buyer in terms of being able to buy a specific standard of quality. At the same time, the seller is protected against competition

Federal Trade Commission TRADE PRACTICE RULES for the HOUSEHOLD FABRIC DYE INDUSTRY As Promulgate 9. 1947 Federal Trade Commission TRADE PRACTICE RULES Respecting the Terms "Waterproof," and Re"Shockproof," "Nonmagnetic," and Re"Shockproof, as Applied to Watches,
lated Designations, as Applied Movements
Watchcases, and Walch Movements As Promulgated April 24, 1947 Federal Trade Commission TRADE PRACTICE RULES for the VERTICAL TURBINE PUMP INDUSTRY As Promulgated June 17, 1947 Typical of recent FTC activities are such rulings as compiled and promulgated in these pamphlets after appropriate conference with members of the several industries.

where the same or similar descriptions are used in describing a machine involving a lesser standard of repair.

The industries covered under Trade Practice Rules range from the vertical turbine pump industry to the doll and stuffed toy industry.

Illustrating the wide variance in type of rules: It is unfair practice to sell dolls or stuffed toys below the seller's cost, where the purpose is to injure a competitor or where

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## EFFICIENT PURCHASING SYSTEM FOR A SMALL COMPANY

Purchasing Department forms and procedure used by The F. W. Wakefield Brass Company

#### · By L. W. Grant

Assistant Purchasing Agent The F. W. Wakefield Brass Company Vermilion, Ohio

POR a better understanding of the purchasing procedures and forms used by The F. W. Wakefield Brass Company, a little background may be helpful. For many years, our company has made lighting equipment for the office and school fields. All of it is basically standardized, though conditions in the field may sometimes call for slight variations in shop practice. There are fifty catalogued styles of equipment, some incandescent and some fluorescent.

While we are considered a "big" company in the lighting field, in the broader view of manufacturing industry the company is a small one, employing approximately 125 people in a small town.

Because we are not among the colossi of big business, our operations are intimate as compared with the big companies in other lines, whose plants may cover acres of space and may include extensive branch operations. Yet, in spite of the fact that most of the company's managing executives walk through the purchasing office several times daily, and other departments are close at hand for whatever personal contact may be needed—Sales-Advertising is through one office door and Production through the other—nevertheless we have found that systematic handling of purchase procedures and records is necessary to avoid costly mistakes that might be based on misunderstandings of verbal instructions.

The forms and system here outlined are tailor-made to fit our requirements. Practically the only alterations that have been made since the system was inaugurated have been in the nature of simplification whenever it is found that the results obtained do not warrant the detail and work involved.

The flow chart shown herewith graphically illustrates the responsi-

bilities of the several departments and the routing of forms to implement smooth and efficient operation and to provide positive control at every step. The lettered symbols shown where the various forms originate correspond to the illustrations of the forms and the text explaining how they are used.

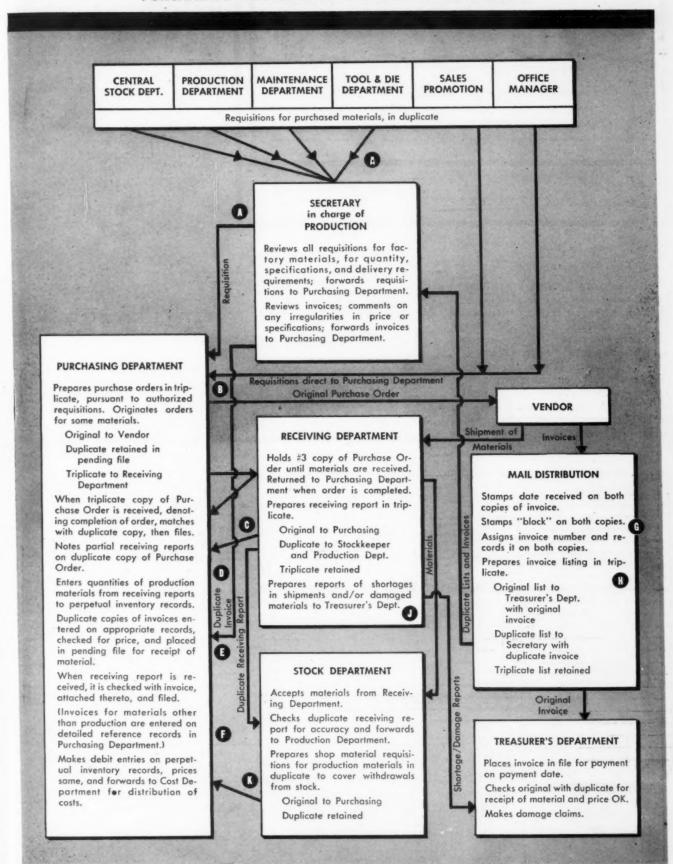
The procedure as outlined covers virtually all purchases with the exception of capital equipment. The amount of capital equipment to be purchased during any given period of time is of course limited by the budget established by the Board of Directors. Such purchases may originate with the General Manager of the company, the Secretary (in charge of production), or the Methods Engineer, but they must be approved by both the General Manager and the Secretary before the requisition is fully authorized and is passed along to the Purchasing Department.

#### Form A. Requisition

Requisitions are made out in duplicate, and both copies are forwarded to the Purchasing Department. The duplicate copy is returned to the originator for his information and record after the Purchasing Department has noted the Purchase Order number and the name of the supplier thereon, in the space provided for that purpose at the bottom of the form. In addition to the six departments indicated as originators on the flow chart, some requisitions originate in the Purchasing Department itself.

Material Requisit PURCHASIN		Date	A
ACCT. NO.	MATERIAL	QUANTITY	WHEN REQUIRE
	6		
	-		
Customer		Factory Order No.	
REQUISITIONED	SUPPLIER	ı	
BY	ORDER	NO.	

#### **PURCHASING DEPARTMENT FORMS AND PROCEDURES**



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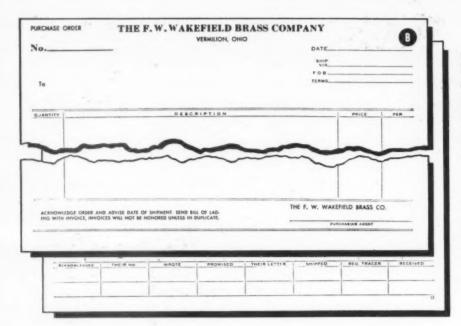
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#### Form B. Purchase Order

The purchase order form measures 8½ x 7 inches, snap-out carbon style, made out in triplicate, and not prenumbered. The No. 2 copy is retained in the Purchasing Department, in the open order file. It provides space at the bottom of the sheet for recording delivery promises, follow-up action, and receipt of materials.

The No. 3 copy, with price information blocked out, is sent to the Receiving Department, where it is held until delivery is completed. It is then returned to the Purchasing Department, matched with the No. 2 copy, and filed.

#### Form C. Receiving Report

Original copy goes to Purchasing Department for posting. Duplicate is used by stock clerk to verify material as checked into stock from Receiving, forwarded to Production as notification of receipt, then discarded. Triplicate is retained in Receiving Department as permanent record in chronological order. Purchasing Department maintains same record by materials (part numbers) or by vendors.

	From	 Original	RECEIVIN	G RECORD	Our No	
NUMBER	GROSS WT.			MATERIAL		NET QUANTIT
		141				
			15 00			
Complete Partial Condition					0	

14 53

UNE								MINIMUM ORDER POINT								
DATE ORDER No.	IM	OUT	BALAI	NCE	DATE	ORDI	ER No.	IN	out	- 1	BALANCE	-				
		DATE	CRDER NO.	v	guan.	PRICE	DATE.	ORDER NO. I	QUAN		RICE	DATE	08058 80	V	QUAN	PRICE PER C
						PERC				-	ERC					1
D		H						7	1							
		V-	PART						V=	PAST						
		-			VENDO	RS			-	1	1.0		HLY USAGE	19	19	19
	-	1							1	19	19	19	19	19	19	100
		2							FER	-	+	-			_	-
		1						41-21-	MAR	-	+			-		1
		5							APR							
									MAY							
		7							JUNE							
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			SP		ATIONS OR				AUG	-	-	-				
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		GRUER POI	INT .	_							RILE	_		1		
PART No.		MAXIRUM S AUD REGRO	ANT.								RICE					EP 1200
			TOM LEG MYG	AFM	MWA 100 100	L AUG SE	P DCT NO	A DEC	NORMA	0	of pris	A MILITA	G N'O CREE	10		9 12 18

#### Form F. Invoice Record

Used as a record of purchases covering supplies and materials other than production material. Items or classes of items in this record are given index numbers corresponding to the classifications of the catalog file. These index numbers are suffixed to purchase order numbers, for correct posting of invoices. A similar index is separately maintained for capital equipment, repairs and parts.

RECEIVED OK	INVOICE
EXTENSIONS OK . G	No.
EXPRESS	ACCOUNT
CHARGED TO	No.

#### Form G. Invoice Stamp

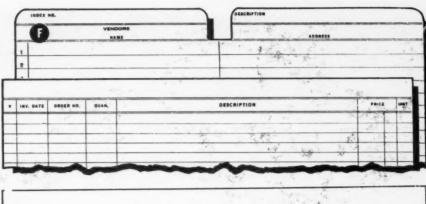
Rubber stamp block form, stamped on original and duplicate of vendor's invoice by Mail Distribution Department when received. The serial number is entered by Mail Distribution; verification of extensions and distribution of accounts by Treasurer's Department; balance of information checked and posted by Purchasing.

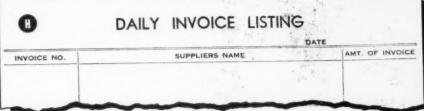
#### Form D. Perpetual Inventory

This is a visible index card record, used for production materials only. Receipts are posted from the receiving reports, and withdrawals are posted from shop material requisitions on the stockroom. The minimum or order point for each item is shown on the card as a guide to purchases for replenishment of stock.

#### Form E. Purchase Order Record

This visible card record is also used for production materials only, and entries are made as orders are issued. Two half-size supplementary cards show (1) list of alternative vendors and specification or ordering description, and (2) monthly usage, taken from inventory cards. There is some duplication in the latter record, but it adds to the usefulness of the file and keeps the perpetual inventory record uncluttered.





#### Form H. Invoice Listing

Daily report prepared in Mail Distribution Department for accurate identification of invoices, in view of large numbers of invoices received from same suppliers. Copies are forwarded to Treasurer's and Purchasing Departments with original and duplicate

invoices respectively. In the Purchasing files, invoice listings are stapled together in chronological order, invoices filed numerically according to numerical classification index. In Treasurer's Department, invoices are filed alphabetically, by vendors' names.

	Dates
Shipper	
No. Containers	No. Pos. in Shipment
No. Pos. Daraged/Lost	Was Damage Concealed?
Nature of Damage	
Carrier	Pro. lio.
Our P. O. No.	Shipper's Identification
RETARKS:	

#### Form J. Damage Claim Report

Made out in quadruplicate by receiving clerk to report shortages or damaged shipments. Two copies to Treasurer's Department, which enters claims. One copy to Purchasing Department.

#### Form K. Shop Requisition

Used for withdrawing production materials from stock. Original is routed to Purchasing for posting to inventory records and pricing, then to Accounting for distribution of material costs.

MATE	SHOP	No.05021	Part No. Order No. Date		
QUAI	wr.	MATERIAL		PRICE "C"	TOTA
0 000					



U. S. cotton on the docks at Bremen. The cotton will be processed into cloth, and much of it will be reexported to obtain dollars to pay for the raw material and to finance other essential imports into Germany

## THE PROBLEM OF FOREIGN TRADE

WITHIN the short span of two years, our policy toward Germany has changed from an insistence that the country be ruralized to assistance in developing that conquered land into the industrial

heart of Europe.

The Morgenthau plan to make Germany into a farmland was discarded quickly. In its place is now proposed the Marshall Plan, which will result in the rebuilding of Germany into an important "nonmilitary" industrial center. Quick reversal of policy did not come out of any change of heart. As many hates are rife toward the Germans today as immediately after VE-Day—even though not as intense.

The change is largely a matter of expediency. The British and American occupation zones do not produce nearly enough food for subsistence needs. This means imports - which must be financed either by the conquered country through the labor of its people, or by the taxpayers of the victorious

Then, there is the political angle. We must either fish in the troubled waters of European politics, or cut bait and return to prewar isolationism.

The trade policies of the military government in Germany are based largely on the need for obPurchasing agents find scant encouragement in looking to Germany as source of goods

taining dollars to be used for the purchase of food. Three sources of dollars are available to the military government-Congressional appropriations, chargeable to the taxpayer; exports which produce a dollar balance; and finally a type of barter, or subcontracting under which the Germans are able to obtain raw materials and process them for re-export, to provide both dollar payment for the materials and a dollar balance with which to buy food.

It works this way: We ship raw cotton to Germany. American shippers are in effect extending nine-months credit for payment, with a commitment by the American Export-Import Bank to discount or purchase such credit drafts. This protects the U. S. shipper.

The Germans process the raw cotton into highly finished cotton goods. Some of the finished goods are re-exported, and the dollars earned in the process go for the payment of the raw cotton. A similar expedient has been developed to handle shipments of wool from Australia.

Obviously, these are merely temporary expedients to prime the

trade pumps.

For the purchasing agent with an eye on Germany as a source of future supply, it is important to note that the JEIA (Joint Export-Import Agency), which controls trade in the U. S. and British zones of occupation, is most interested in arrangements where expenditures for raw materials are small in relation to the dollar value of finished product.

Policies of this export-import agency are all-important in arranging any trade connections with German firms, as all commercial exports from the U.S. and British zones require the approval of

IEIA.

An example of the stress laid on high end product value in relation to costs of raw material is the stress on relative costs and sales values in the announcements by the military government of its approved export programs.

In announcing a six-month program for the production of pencils, it was pointed out specifically that the program called for the "production of \$6,000,000 worth of

pencils by Nuremberg firms from

\$900,000 worth of raw materials". To obtain materials for manufacture of pencils, the German manufacturers have a considerable procurement problem. They import gums and glues from Egypt and Persia; aromatic woods from the United States and from Mexico; nitro-cellulose for varnish from Sweden; linseed oil from South America: rubber from the Western Hemisphere; graphite from Mexico, Ceylon and Korea; kaolin and alder-wood from Czechoslovakia; wax from Japan, and talc powder from Austria.

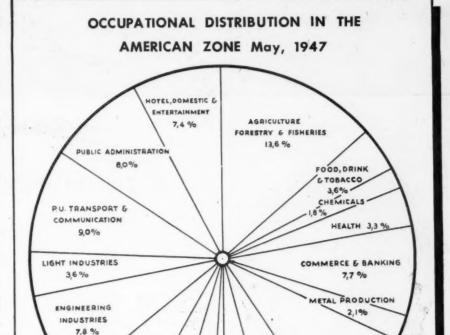
Because of the quality of the pencils and the special types produced, there is a world demand for them.

Another example of stimulated exports is in the toy field. Before the war, German toys were highly regarded. In announcing a toy export program, the military government points out that the export dollar value will be \$5,000,000, and that only \$500,000 worth of materials will have to be imported for the manufacture of the toys.

But for all the optimism and efforts of the military government in stimulating German export trade, it is apparent that large scale trade is still far off. There are a number of "if's" involved.

A requisite is agreement to increase the "level of industry" in Germany. It is now proposed that industrial activity be increased to approximately 70% or 80% of 1936. This would be a fairly high activity when it is taken into account that by 1936 Germany was well along in her war economy.

Currently, German industry is



A relatively small percentage of the industrial population of the American Zone can contribute to the production of exportable goods

MINING

4,3%

STONES 6

barely able to produce for the needs of Germany, and unless this level of output is substantially increased, the volume of trade will of necessity be small.

TEXTILE & APPAREL

5,8 %

TIMBER & S'

3,5 %

MANUFACTURE

3.7 %

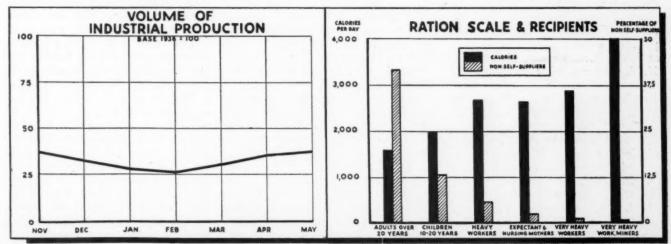
Another "if" is the Marshall Plan. Unless there is a coordinated effort to re-establish the trade economy of Europe, reconstruction and subsistence efforts will drain off most of the production of the working population of Europe, and there will be little exportable sur-

CONSTRUCTION

OCCUPYING FORCES

8,6 %

Based on the record of the first half of 1947, German production has a long way to go before the objective of 80% (1936 = 100) is achieved The desperate need for food imports is the motivating force for rehabilitating German industry quickly







W. Z. Betts, Division of Purchase and Contract, State of North Carolina, new president of NIGP

Stress Need for Simplifying Forms, Procedures and Nomenclature in Government Buying at Annual Conference in New York — Survey Reveals Dearth of Standardization — W. Z. Betts Named President

Z. BETTS, Director, Division of Purchase and Contract, State of North Carolina, Raleigh, N. C., was elected president of the National Institute of Governmental Purchasing, Inc., at the 1947 annual conference and products exhibit of that body, held at Hotel Pennsylvania, New York, N. Y., September 7, 8, 9, 10 and 11.

Joseph W. Nicholson, City Purchasing Agent, Milwaukee, Wis., was elected first vice president, and John F. Ward, Assistant County Purchasing Agent, County of Cook, Chicago, Ill., was named second vice president. And, Michael F. Donohue, County Purchasing Agent, County of Allegheny, Pittsburgh, Pa., was named Treasurer.

Also it was voted to increase the number of directors from 11 to 21,

## NIGP REPORTS YEAR

adding seven new members this year, and three next year. Accordingly, the following were named new members of the board of directors to serve for a term of three years:

J. Clark McGuire, Director, Department of Purchases and Services, Port of New York Authority, New York;

John W. Huffman, City Purchasing Agent, Richmond, Va.;

Bernard L. Gill, City Purchasing Agent, Madison, Wis.;

Albert A. Parent, Controller and Purchasing Agent, City of Lewiston Me:

Geo. F. Robinson, Assistant Secretary, Board of Education, City of New Haven, Conn.;

Edmund Stevenson, Secretary-Business Manager, Kearney, N. J.; Thomas Beckum, City Purchas-

ing Agent, Augusta, Ga.

The City of Philadelphia, Pa., on invitation of Charles H. Grakelow, Director, Supplies and Purchases, was selected as the place of the Institute's next annual conference and products exhibit, to be held on or about the first of October, 1948.

In addition to the usual vote of thanks tendered to the host city, hotel, exhibitors, and others, the report of the resolutions committee included a vote of thanks to General Robert M. Littlejohn, administrator, War Assets Administration, for his cooperation; recommended to the WAA the adoption of an outright donation program to governmental agencies at all levels of government; and approved a proposal for the establishment of a permanent Federal Property Disposal Agency. The sense was expressed that the Federal Government should have an agency or

department through which all federal surpluses should be cleared, first through other federal departments, and then through states, counties, cities and other divisions of government before it is disposed of.

Albert Pleydell, retiring president, and former Commissioner of Purchase, City of New York, was made honorary president of the Institute, and David H. Marbury, City Purchasing Agent, Birmingham, Ala., was made honorary vice president.

In a formal statement the Board of Directors of the Institute stated that the panel discussion of "Making It Easier to do Business With Government", at which Clifton E. Mack presided, and the report on the Institute's survey of purchasing practices and procedures by David Joseph, combine to crystallize certain areas of activity that require the immediate attention of the Institute. Especial note was given to the participation in Institute discussions by representatives of industry, and the statement was made that they had made an important contribution to the thinking on mutual problems.

The Board authorized the president to appoint a special committee the function of which will be to present a plan for the formation of a foundation designed to conduct extensive studies and surveys of public purchasing practices and procedures in order to secure facts for further action. The committee would bear in mind the ultimate development of model forms of practices and procedures and the publication of educational material to be made available to public purchasing agencies and others interested.



## OF ACHIEVEMENT

The Board also authorized the local governments are concerned, president to appoint a committee to has been disappointing and unsatisstudy proposals made at the conferfactory. Had it not been for the ence in connection with the simplifiefforts of NIGP, state and local cation of forms and documents used governments would not have ob-

tained much of the surplus prop-

in the purchasing process. The theme of the Institute's 1947 Conference and Products Exhibit was "Doing a Big Job Better". Following conferences and "breakfast" meetings on Sunday and Monday, the Conference was formally called to order Monday morning, September 8, at 10:00 A.M.

**Opening Session** 

President Albert Pleydell reported a year of solid achievement for the NIGP. He stated that for the past three years the organization has devoted militant attention to the problem of surplus property disposal, saying that some of the association officers and directors assisted in the drafting of the Surplus Property Act of 1944, and also formulated a plan to facilitate and regularize disposals of surplus to state and local governments. The plan was a good one, he said, but it was neither adopted nor heeded, though had it been placed in effect every unit of government in this country would have received its fair and equitable share of the property bought and paid for by the people.

Recently, through the efforts of NIGP, machine tool donations were made to state and local governments in a broad national plan. The sole motive of NIGP, he said, has been to get surplus property "for the people of this country through their governmental buyers.

"Even with the use of the most charitable terminology", he continued, "we must say that surplus property disposal so far as state and

He mentioned as of utmost professional significance, a nationwide survey of public purchasing practices and procedures conducted by NIGP, toward the compilation of which 235 governmental purchasing agents supplied operating data and information. The detailed findings of the survey were reported at a conference session on the morning of September 10th, by special survey director David Joseph. The Survey Committee was headed by Louis J. Cook, superintendent of school supplies of the Board of Education, New York City. Mr. Pleydell predicted that the conclusions of the report will point out

important areas for further study, and indicated the possibilities inherent in a broad national program for the simplification and standardization of public purchasing practices and procedures.

Holm; Clifton E. Mack, chairman; W.

Z. Betts — at the "mike"; John F. Ward; N. L. Parsons, (Fuller Brush Co.); Earl B. Mix, (Lily-Tulip Cup Corp.); Mary E. O'Connor; Frances Swadener, (A. B. Dick Co.); Edwin F. Nelson; Philip Epstein; Wilfred

F. Nelson; Philip Epstein; Wilfred Nerlich; and John R. Rowe, (Encyclopaedia Britannica).

Referring to collaboration with other technical and professional groups, Mr. Pleydell said that NIGP had been represented on purchasing committees of the American Hospital Association, that the American Standards Association had asked it to be represented in an advisory capacity on its Office Standards Project, and that the National Fire Protection Association had requested the cooperation of NIGP to discuss possible revision of fire apparatus specifications.

Concluding his talk, he declared that the Washington office has never differentiated between members and nonmembers if some useful thing were needed to be done, and empha-

#### NEW OFFICERS AND BOARD MEMBERS OF NIGP

Left to right: Bd. Member, E. Stevenson, Secy-Business Mgr., Kearney, N. J.; Honorary Vice President, David Marbury, City Purchasing Agent, Birmingham, Ala.; First Vice President, Joseph W. Nicholson, City Purchasing Agent, Milwaukee, Wis.; President, W. Z. Betts, Divn. of Purchase & Contract, North Carolina, Raleigh, N. C.; Second Vice President, John Ward, Asst. County Purchasing Agent, Cook County, Ill., Chicago; Bd. Member, James Clark McGuire, Dir. of Purchase & Special Services, Port of New York Authority, New York; Bd. Member, Thomas D. Beckum, City Purchasing Agent, Augusta, Ga.; Honorary President, Albert Pleydell, New York; and Albert Hall, Executive Director of NIGP, Washington, D.C.





Dr. Edward U. Condon, director, National Bureau of Standards, Washington, D.C.



John R. Campbell, director, Priority Claimants Division, WAA.



Clifton E. Mack, director, Federal Bureau of Supply, Treasury Department, Washington, announces National Academy for Public Purchasing.

sized that NIGP has tremendous potentialities for greater and more useful service.

Albert H. Hall, executive director of NIGP, Washington, D. C., next made a brief report, in the course of which he declared that NIGP will never be a tool of any political division, nor any segment of business, and that its influence and prestige will never be used selfishly or cheaply. The main object of the organization, he said, is to strengthen the public purchasing agent in his functions, and to help him in every way possible.

Joseph W. Nicholson, City Purchasing Agent, Milwaukee, Wis., was the following speaker. His interesting presentation, a symposium of buying tips garnered from numerous governmental buyers, appears elsewhere in this issue of Purchasing.

Copies of greetings from President Truman were distributed at the luncheon meeting, at which the guest of honor was Grover A.

Whalen, chairman of the mayor of New York's reception committee, who stated that he was the first Purchasing Agent of the City of New York. Mr. Whalen declared that the purchasing department of the City of New York is now one of the most successful and most efficient purchasing organizations in any part of the country.

"We in business", he said, "have found that if we can keep our fingers on the purchasing department and have it functioning correctly, we will save money. I have found it so in my business. The one man I always talk to is the purchasing agent so that I can grasp from him whether he has an understanding of the importance of his task." Mr. Whalen declared that the importance of the task of the purchasing agent in these days of high prices and constant increases cannot be over-estimated.

"Sampling Plans in Purchase Specifications" was the subject of a paper by Dr. Edward U. Condon, director, National Bureau of Standards, Washington, D. C., at the luncheon meeting. Dr. Condon, stating that purchasing requires the careful development of precise and detailed specifications of the material desired, said that there had recently been organized at the National Bureau of Standards, a division known as the National Applied Mathematics Laboratories, one section of which is the Statistical Engineering Laboratory, in recognition of the importance of sampling plans and inspection procedures as a part of purchase specifications. Also, recently organized, is a Division of Commodity Standards, one of whose activities will center on purchase specifications.

"That the purchase specification should include a section dealing with test procedures—the technical means of determining quality—has long been recognized and widely applied", he continued. "But equally important as a part of the specification is an exact description of the rules by which samples for test are to be drawn from the offered lot, and the basis on which the lot is to be accepted or rejected.

"Complete inspection, or screening, to sort the items into accepts and rejects, is seldom desirable. Just how much inspection should be done may depend on other than economic factors. Obviously a few bad nails in a barrel of nails will have no serious consequence, but

the failure of the safety belts worn by window washers in high buildings has more serious consequence than simply the loss of the money value of one safety belt."

Dr. Condon suggested that all persons interested in large-scale purchasing would find helpful a book entitled "Sampling Inspection", by the Statistical Research Group of Columbia University, New York, and cited several examples of sampling plans, covering single sampling, single sampling variable lot size, double sampling, and sequential sampling.

He said it is the hope to incorporate the new features into the Federal Specifications as rapidly as they can be worked out, "for we are convinced that they can make a great contribution to improved purchasing techniques."

#### Doing Business with Government

Of unusual interest was the panel presentation of the broad subject "Making it Easier to Do Business With Government," in which eighteen governmental purchasing agents and representatives of industry participated. Clifton E. Mack, director, Bureau of Federal Supply, Washington, was chairman of this diversified discussion, which consisted of three phases or sections as follows:

- (1) Simplification of Government Forms and Procedures. W. Z. Betts, director of the Division of Purchase and Contract, State of North Carolina, Raleigh, N. C.; N. Parsons, industrial division, Fuller Brush Co., Hartford, Conn.; Earl B. Mix, advertising manager, Lily-Tulip Cup Corp., New York; Mary E. O'Connor, director of purchase, State of New York, Albany, N. Y.: Frances Swadener, manager, city-county-state department, A. B. Dick Co., Chicago, and Edwin F. Nelson, assistant superintendent of schools in charge of business affairs, Hartford, Conn.
- (2) Purchase Specifications in Government Business: Alvin J. Holm, city purchasing agent, Los Angeles, Calif.; Leonard P. Haimes, president, Leonard Haimes Co., Inc., New York; Thomas D. Beckum, city purchasing agent, Augusta, Ga.; E. F. Mitchell, president, V. H. Blackinton & Co., Attleboro Falls, Mass.; Wm. E. Brennan, city purchasing agent, St. Paul, Minn.; J. O. Smith, manager, institutional sales department, The Quaker Oats Co., Chicago.

(3) What Can Be done to Make It Easier to Do Business with Government: Wilfred Nerlich, county purchasing agent, Montgomery Co., Rockville, Md.; John R. Rowe, educational director, Encyclopaedia Britannica, Chicago; Wm. J. Burke, city purchasing agent, Corpus Christi, Tex.; Fred Weber, manager, institutional division, Ralston Purina Co., St. Louis, Mo.; Carl Riggs, director, State Department of Purchase, State of West Virginia, Charleston, W. Va.; and Philip Epstein, assistant superintendent of school supplies, Board of Education, City of New York.

In opening the discussion, Chairman Mack pointed out that "the public purchasing officer is guided by laws or executive directives with carefully prescribed authorizations which must be carefully observed because he is spending taxpayers funds for services of government. He should and usually must, look to competitive markets for supplies and expenditures, for purchases must be adequately documented because public funds are involved. The objective then which government should seek to conform to is to safeguard this procurement with the minimum of procedural routine and paper work. Those of us in government know that a new form, a changed procedure, an additional contractual provision, or a request for information means expense to industry and a consequent increase in bid prices. We know that restrictive or proprietary specifications limit competitive bidding.

"On the other hand, industry knows that governmental requirements are substantial, that a government account is good and that the supplies are for public protection, construction or maintenance of highways, buildings, or for the many other needs to provide the service of government."

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Mr. Betts, the first speaker, emphasized that any steps that will facilitate the conduct of business between government and private in-

#### THE WHITE HOUSE

#### WASHINGTON

I am happy to send greetings to the National Institute of Governmental Purchasing and good wishes for a successful conference.

Public purchasing agents in the employ of federal, state, municipal, and other subdivisions of government, spend billio: s of dollars annually on behalf of the tax-payers. The function of the public purchasing agent is, therefore, an important one in the national economy.

The program of your Second Annual Conference is stimulating and comprehensive and much good should evolve from it. I note with pleasure your desire to improve the standards and practices of public purchasing through such means as the establishment of the National Academy for Public Purchasing under the spor sorship of the Bureau of Federal Supply of the Treasury Department. Federal purchasing officials, as well as those who buy for state and local governments, should benefit from this mutual exchange of experience in buying techniques.

I send my best wishes to all of the public purchasing officials and their friends at the conference.

August 21, 1947

Very sincerely yours, HARRY S. TRUMAN

dustry are of vital concern to all, stating that "When we talk about simplification of procedures, we should not lose sight of the mechanics of government that control buying procedure.

"I have no doubt that industry often wonders why certain governmental agencies operate in some peculiar way, totally different from the procedures of other governmental agencies", he continued. "The answer lies in the laws of origin—the enactments that establish the purchasing agency and its basic procedures.

"I think we can begin with the premise that public purchasing agents want to simplify forms and procedures where such action will best serve the taxpayer by making it easier for industry to do business with government."

Expressing doubt as to the im-

mediate possibility of the adoption of uniform laws by federal, state, county, municipal and other governments, he said he felt that genuine progress could be made by cooperative exchange of experience and information among governmental agencies.

"Speaking for governmental buyers", he said, "I can say with all sincerity that all of us want to move in the direction of simplification, or, as I would prefer to put it, plain talk. Cooperation between industry and the NIGP is one of the means through which we shall get improvement."

Mr. Betts proposed that the NIGP launch three surveys of public purchasing agencies. The first, a study of the laws of the governmental divisions and subdivisions that control public purchasing, looking to the development of the

The product exhibit hall was adjacent to the assembly room.





Mar-David H. bury, City Purchasing Agent, Birmingham, Ala.



Paul L. Burroughs, purchasing agent, Penn-sylvania Hospital, Philadelphia, talked on Specialized Problems of Pur-chasing for Institutions.



Joseph W. Nicholson, purchasing agent, Milwaukee, Wis., reports on survey of money saving practices. He is the new first Vice President of NIGP.

most desirable features of law that affect purchasing activity;

Second, a study of the forms used for "invitation for bids" or "request for bids", looking to the development of streamlined forms for use throughout the country;

Third, a study of purchase order forms, with the same objective in

N. L. Parsons, industrial division, Fuller Brush Co., stated that his department has to contend with three different types of forms, namely-the form on which bids are submitted, including the specifications for the items involved; second, the purchase order itself; and, third, the shipping instructions, including packing specifications, inspection procedure, etc.

One of the big difficulties is that so many governmental forms are written by lawyers, and though they are presented in a form that is legally correct, the actual use or working of the form is often lost sight of, and the form is hard to put into operation.

"After the bid form has been prepared, the award made and the purchase order issued, it again is an involved procedure. The form should be drawn in such way that all billing instructions are simplified and consolidated in one place. All numbers and other information required on invoices should be specifically marked so they will not be overlooked.

"My third thought has to do with the preparation of the shipment after the order has been received. Here again we are dealing with comparatively small articles which in many cases cannot be packed for shipment in accordance with the instructions received. If more latitude were allowed, delays would be eliminated.

"If the forms you use could be simplified and condensed, eliminating duplication of instructions, and with more latitude allowed, particularly on items of less value, it would make for better understanding, faster shipments, better service and

lower cost", he concluded.

Earl B. Mix, Lily-Tulip Cup
Corp., suggested that the NIGP analyze bid and acceptance forms used by its members, as well as other forms, develop suggested forms and include them in a booklet on the general subject of government buying, setting forth a simplified buying procedure.

He said that in the past few months his department had received 20 different types of forms, ranging from a single sheet request for quotations to a 150 page book put out by one state which costs the bidder \$2.50.

#### Action Necessary

Mary E. O'Connor, director of purchase, New York State Division of Standards and Purchase, stated that her office maintains a list of some 10,000 vendors, and purchases under centralized contract, some 2500 commodities, and handles approximately 600 open market purchase requisitions a day.

'In bringing about this discussion we are affecting cooperation, but we need to progress to coordination" she said. "We need to crystallize our talks into practical, harmonious and effective results to our mutual advantage and for the benefit of the taxpayer. We can cooperate here to our hearts' content but unless we can go back home and get our employers and our superior officers and associates to implement our planned program into action through coordination, our cooperation will be just so much more water over the dam of ineffectual discussion.

"Vendors, individually and through their trade associations, should demand relief from the cumbersome and unbusinesslike procedures which originate in government but outside of the purchasing department. The vendors can campaign for more purchasing statutes, standardization and simplification of purchasing and accounting procedures. They can present these problems to such organizations as the legislatures, the Council of Governors, the Conference of Mayors, the National Association of Treasurers, Comptrollers and Auditors, the Municipal Finance Officers' Association of the United States and Canada—all of whom are undoubtedly as much interested in good government as is the NIGP.

As I see the situation, standardization is the keyword to efficient buying procedures and a minimum of paper work the line of demarcation between efficiency and incompetency. Standardization of laws, specifications, purchase terms, procedures, forms, packaging, minimum orders, phraseology, and formulas for the use of products are all essential to the establishment of desirable uniformity and fair competi-

"Some vendors complain against governmental purchasing agents and sources of supply bidding directly to government. They maintain that this practice is discriminatory against dealers and retailers. In the United States today 40 of the 48 states have centralized purchasing departments. Why? For one reason, to purchase at advantageous The older purchasing statutes limited centralized purchasing to commodities in common use by two or more public agencies, and required purchase at wholesale. Certainly such legislation precluded the idea of localizing governmental purchasing in the interest of particular dealers. There are no private rights in the expenditure of public funds and we as purchasing agents are bound to carry out the mandate of the statutes."

#### Stock Numbering Systems

Frances Swadener, A. B. Dick Co., speaking on "The Need for Standardization of Stock Numbering Systems" declared that there is little doubt that any manufacturer who sells to various governmental offices would like to see a standard nomenclature and stock numbering system adopted by all governmental

"In our opinion", she said, "the method of numbering that is used by the Bureau of Federal Supply is excellent. It is both complete and flexible and could well be used as a basis for a standardized system. This would eliminate many hours of clerical work on the part of industry and would undoubtedly work to the advantage of government as well."

The speaker said that one of the most vexing problems that industry has in doing business with government is trying to find out where to

go and whom to see.

"Should we go to the posts, camps and stations of the army? To the field offices of the Department of Agriculture? The local offices of state highway departments? And other offices on the local levels? As a general rule such offices usually develop the need for and actually use the product. Or should we go to the top levels?—the places where new products are approved?

"A clear definition by Government of procurement responsibilities of the various purchasing echelons would be of tremendous help to industry, especially the smaller organizations. This would save on overhead for the manufacturer, a proportionate amount of which would reflect in lower prices to

government.

"Standardized or semi-standardized forms for all governmental purchasing would result in a sharp reduction in handling time and make it much easier for Industry to locate and analyze specifications, penalties

and conditions.'

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Edwin F. Nelson, assistant superintendent of schools in charge of business affairs, Hartford, Conn., said he saw no reason why there should not be a uniform invoice form. "We work with uniform bills of lading, etc. and there is no reason why we should not have at least uniform business forms in government," he said.

#### Purchase Specifications

Alvin J. Holm, city purchasing agent, Los Angeles, Calif., stated that the one obvious thing about

NATIONAL ACADEMY FOR PUBLIC PURCHASING

Clifton E. Mack, Director of the Bureau of Federal Supply, U. S. Treasury Department, speaking on the opening day of the N.I.G.P. Conference in New York City, announced plans for the establishment of a National Academy for Public Purchasing.

The Academy will have as its objective nationwide interchange of knowledge on buying practices and techniques. Federal, State, and Municipal purchasing officers will be given the opportunity to attend training sessions periodically in Washington, to hear outstanding figures in the purchasing world, and to study latest procurement techniques and practices.

The new Academy will not entail any additional Federal appropriations or facilities. The Bureau's existing personnel and equipment will be utilized, and the training curriculum will make fullest use of both the Bureau's Washington facilities and its eleven field establishments.

The Bureau of Federal Supply's part in the program will be exclusively instructional, cooperative, and informational. The Bureau in no way will impinge on local practices, but will undertake to make available all of the facilities at its command.

Original proposal for the establishment of the Academy was made by W. Z. Betts, Director of the Division of Purchase & Contract for the State of North Carolina, and President-elect of N.I.G.P. Executive Director Albert H. Hall of the Institute has had an active part in drafting the plan.

Definite dates for the first series of sessions will be announced soon.

the question of the use of specifications is that one should not be dogmatic in announcing a solution. The needs change with circumstances and with economic conditions

"It is up to each purchasing agent to decide the extent to which he will use them because there are many instances where the use of specifications is not necessary", he said. "Furthermore, they can never wholly displace the need for integrity and responsibility in yendors.

"The importance of the purchase from the standpoint of either dollar volume or use should determine which items are to be covered and what type of specifications are to used.

"To be good, the specifications should be brought up to date with every purchase. When they are printed and made up in book form there is great danger of quality being frozen as of the date of printing and subsequent industrial development lost to the buyer. Another danger is that some vendors may have copies of the original printing but fail to receive the amendments and thereby quote on the wrong basis.

"Materials can be divided into two groups. Those that are in general use and those that are used

Albert W. Pleydell, retiring president, is presented with token of appreciation for a job well done, by Alvin J. Holm.



Left to right: M. S. Cooper, F. A. Adams, C. M. Healey Jr., and John E. Beardmore enjoy talk by President Don G. Mitchell of Sylvania Electric Products.





Mrs. James Clark McGuire, wife of the Director of Purchase & Special Services, Port of New York Authority, and Capt. George E. Stickle, superintendent, George Washington Bridge, show the visiting ladies the Metropolitan area from atop the huge bridge.

mainly by one or two departments. The purchasing employees will probably have a wider knowledge of quality and characteristics of the materials in the first group than anyone in the using departments. Therefore, specifications for such materials should rightfully be formulated in the purchasing department, but for materials in the other group, they should be drawn up by the using agency in collaboration with the purchasing agent.

"There are several types of specifications and several recognized sources for information. Among the best known sources are the Federal Government, The American Society for Testing Materials, and the Society of Automotive Engineers. The National Directory of Commodity Specifications, complied by the Bureau of Standards is a very helpful index to published Federal Specifications.

"Following is a brief sketch of the types of specifications with some of the conditions where they can be read:

(1) Brand or Trade Name. With governmental agencies it is common to add the words 'or equal.' This is the simplest form of specification but usually does not bring the lowest possible prices. Firms whose products are not mentioned may take offense at the advertising being given competitors. This can be avoided by having a list of approved brands and giving every vendor an opportunity to submit his product for approval. The mentioning of brand or trade names is satisfactory on purchases involving such small amounts that they do not justify the expense of preparing detailed specifications and testing for compliance.

(2) By stating the electrical, physical, or chemical characteristics. This is common and a good method where this type of data can be given

because the values can readily be checked by the buyer. It has its limitations because many materials can be made to give good laboratory tests but will not be satisfactory in service.

"Another weakness of this type is that it definitely limits the vendor on what he can quote and prevents him from offering the results of his research and development work on something that he may know to be better.

(3) By a Standard Sample. This method is good where a particular shade of color is required or where it is difficult to describe an item.

(4) By description of the purpose or use. This method has the advantage of giving the vendor the widest range to use his experience and knowledge in submitting quotations. It has the disadvantage of creating disputes due to differences of opinions as to what is satisfactory performance. A performance bond should be required when this method is used.

"Extreme care must be excercised on 'use' specifications to make certain that all bidders meet on common ground. The courts have held for instance that road tests alone are not sufficient in the purchase of traffic paint.

"In general the courts hold that the law permits no private negotiations with an individual bidder, no change of plans and specifications submitted for the competition, no variances for the purpose of obtaining a change in the bid of one or more bidders."

#### Catalog of Requirements

Leonard P. Haimes, president, Leonard Haimes Co., suggested that governmental buying bodies should prepare catalog-type lists of their requirements. He said that probably the greatest error on the part of purchasing agents lies in the preparation of specifications. He cited a case wherein a state purchasing department asked for a price on "one only ice box, electrically operated, size 8 x 10 ft., for use in prison bakery."

"We are at a loss to determine how it would be possible for the purchasing agent to decide as to which bid is the lowest and who should receive the award, since every important detail has been omitted. For example, the type of construction; what type of interior: What electrical specifications? What type of compressor? etc.

"The second most popular fault is the continuous reference in bids to unknown local dealers' catalogs.

"It is our opinion that the governmental method of purchasing by means of competitive bidding can only be successful when the greatest possible number of bids are received. This can best be accomplished when description and other details are clearly stated, if possible, without reference to any particular catalog. Instead, bids should contain full specification taken from a catalog, word for word.

"There are a great number of municipalities that prepare such lengthy specifications, ifs, ands and buts, that not even the manufacturer can recognize his own product.

"Innumerable bids request prices delivered to 20 or 30 schools or hospitals in split quantities or broken case lots. The bidder therefore raises his price to cover any eventualities. A bid requesting delivery to one central depot can be estimated very closely with smaller profit."

#### Standardized Specifications

Thomas D. Beckum, Purchasing Agent, Augusta, Georgia, expressed the opinion that the ability of the purchasing agent to do a successful job depends very largely upon the development of standards and purchase specifications which will enable him to require competitive bidding.

"It has been my personal experience", he said, "that where standardized specifications are available, the purchasing agent can speedily, efficiently, and economically complete the job of advertising, opening bids, and awarding of contracts.

"Purchase specifications should recognize commercial standards as a primary basis. Where storehouses are available to the purchasing agent, specifications should encourage mass purchasing. Frequent small purchases are very expensive. Purchase specifications which will enable competitive bidding will, in my

opinion, certainly have a tendency to cut down cost."

E. F. Mitchell, president, V. H. Blackinton & Co., stated that metal badges, insignia, etc., are in many instances distributed through a middleman, wholesaler, or uniform manufacturer. He suggested that persons responsible for purchasing badges make doubly sure that insignia worn by members of departments, such as sealer of weights and measures, dog officers, health department employees, etc., be easily distinguishable from police department or other law enforcement departments.

There are few standards beyond material, quality, finishes, and attachments. These are standard and should be specified. Otherwise a bare outline of the requirements and a request for ideas or samples "more than fills the bill." A sketch or drawing of the desired item will in 98% of the cases be more than enough information for an experienced insignia manufacturer.

#### Adequate Specifications Indispensable

J. O. Smith, institutional sales department, the Quaker Oats Co., emphasized that adequate specifications are vitally important, and that the contractor cannot be blamed for delivery of an unsuitable product if he has not been given sufficient information as to what is needed. The failure to incorporate proper specifications in the request for bids may preclude the possibility of getting a quality product, he said, especially so if it is on a formal bid with the award going to the lowest bidder.

Delivery specifications are particularly important on large quantity contracts. More realistic delivery schedules would be very helpful. Rush deliveries should also be avoided where possible as acceleration often increases the cost.

"Your product and packaging

specifications should adequately describe the product and package," he said, "and should be such that the agencies of government would be assured of getting quality products properly packaged.

"Secondly, the specifications of the various agencies should, in so far as practicable, be uniform and should conform with standard commercial practice where feasible. If you need special or exceptional articles, I believe you will always find industry glad to provide them.

"Third, be as realistic as you possibly can in making your delivery schedules. This will facilitate the handling of your requirements at the mills and avoid disruption of production schedules."

#### Sealed Bids

William J. Burke, purchasing agent, Corpus Christi, Texas, said that public purchasing falls into three general classes: (1) small purchases which are made under terms of a maximum dollar value as set by statute, ordinance, or accepted practice; (2) open market price quotations from which the most advantageous offer is selected; (3) sealed bids.

The first two do not cause a great deal of trouble, he said. The principal difficulty lies in the sealed bids. The award should be made on the basis of adherence of the bidder to the specification, the delivery promise, the ability of the supplier to fill his commitment, and price.

"Since most high value purchases are made under the sealed bid arrangement, certain mechanics should be set up by government for obtaining bids. All units of government should provide a manual of procedure or instructions on how to do business with the agency calling for the bids or quotations. Government should operate an index of qualified bidders or those who desire to bid on government contracts. In actual

operation the index would most likely have three working parts: (1) accepted list; (2) undesirable or failed in performance; (3) unknown or unwilling to solicit government business.

"When government is able to clearly state its requirements, and suppliers are in a position to understand government needs and the manner in which government operates, a point of contact is established. When industry recognizes government's responsibility, and when purchasing officers have and use the information that enables them to simultaneously spend and save the people's money, the problems attendant to government transactions will be solved through understanding."

wilfred Nerlich, county purchasing agent, Montgomery County, Rockville, Md., stated that there should be standardization and uniformity of forms, though he did not think anybody would recommend revolutionizing all forms, saying, "we should experiment with one form at a time, and see how it works. But let's do something about it."

Mr. Nerlich expressed the opinion that a perpetual inventory system and central warehouse, and education of users, would obviate many small orders. Also, he said that he felt the results of bids should be sent to bidders as it would help them in future bidding, and recommended the adoption of a standard stock numbering system.

#### You and Your Profession

Professor Wallace W. Sayre, School of Business and Public Administration, Cornell University, Ithaca, New York, inaugurated the Tuesday session with an address on "You and Your Profession."

The distinguishing mark of a profession, he said, is the possession

"Making Public Purchasing Your Career" was subject of talk by H. Eliot Kaplan, executive director, National Civil Service League.

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11 rnProfessor Wallace W. Sayre, School of Business and Public Administration, Cornell University, gave a thought-provoking talk on "You and Your Profession". Don G. Mitchell, President, Sylvania Electric Products, Inc., addressed luncheon meeting on "Decentralization Helps Big Business Meet Its Social Obligations."



of an intellectual technique, acquired through special training, which can be applied to the problems of everyday life. While this is the basic characteristic of a profession, he said, there are additional criteria which will help us explore the status and progress of public purchasing as a field which aspires to establish itself as a profession.

(1) Standards of performance and a recognizable body of best practices. Controlled admission to the group. Purchasing has made great progress toward this goal. The literature of standards, of procedure, of testing and inspection to mention only a few areas, grows more impressive every year. In this way, methodology and aims become objective, subject to analysis, change and improvement.

(2) A code of ethics, which amounts to a recognition of the group's responsibility to society and to its own special public, is another important clue to a profession. The purchasing agents have made an important beginning in this field, but one cannot describe it as a full code. It is incomplete in coverage; it lacks the sanctions, the instruments of group discipline which the more mature professions possess.

(3) A systematic program of self criticism-of techniques, or performance, of results-is a less obvious but no less important asset of a profession. It is in this process -the continuous pursuit of group contribution to the improvement of concepts, of policies of techniquesthat the profession differs most markedly from the non-professional group. Purchasing is now just be-

ginning this task .

(4) The establishment of a specific, concrete program for progressthe identification of major short range and long range goals for accomplishment by the profession. Diagnosis and group self-appraisal are not enough. There must be an action program, a program built realistically upon the present pro-blems and capacities of the group. Purchasing has made great strides in this field of professional behavior. But can we say it yet ranks, in this respect, with medicine, with law, with engineering, or accounting? There is certainly an area for redoubled, even heroic effort.

(5) All professions seek recognition as a profession. That is, they strive for an understanding and an acceptance of the intellectual technique which is their life's work. For purchasing this means, I believe,

the task of gaining a seat at the top management table. Others who perform similar professional assignments are already there-accounting, budget, personnel.

(6) The replacement of the apprenticeship method by an organized body of professional literature and professional instruction. Purchasing has the literature, though it tends to be over-technical. It is beginning to develop the instruction. But here we are indeed at the very beginning.

(7) Professional literature and professional instruction grow in the mature professions, into a complete program of instructions. Purchasing has not reached this state. It is here that the universities can be of much help. The organization of research, the development of new hypotheses, the detached appraisal of performance, the production of usefully organized texts and manuals, the instruction of aspirants to the professions—these are the special business of universities.

"A review of the scene brings us to this conclusion: Public purchasing is not yet a profession, but it is well on its way to becoming one. The goal is worth while. The technique which you practice is certainly difficult enough; the task you perform is certainly important enough; your group effort at self-improvement and self-discipline is a sure sign that you will succeed."

#### Purchasing as a Career

H. Eliot Kaplan, executive director, National Civil Service League, next presented a paper on "Making Purchasing Your Career". This is published in this issue.

William W. Parsons, administrative assistant to the Secretary of the Treasury, Washington, was the next speaker. He reviewed the establishment of the Procurement Division of the Treasury, now the Federal Bureau of Supply, and the establishment of field warehouses or Federal Supply Center "stores" of which there are a dozen. The idea of establishing the district stores, he said was "sold to top management" by able purchasing men who were convinced that the system meant better and cheaper servicing.

Mr. Parsons quoted Editor Stuart Heinritz of Purchasing Magazine, who in discussing the future of purchasing, said: "We may be ever so competent, useful and deserving; we may gather among ourselves and pat ourselves on the back for our achievements, gazing with starry eyes at the potential of purchasing as we know it; but it profiteth us nothing unless we persuade management to see it the same way.

The object lesson that all of us can learn from this case is simply this", he concluded. "If centralized, professional purchasing is attainable in the necessary complexity of Federal establishment, then it is more easily attainable on other levels Wherever and of government. whenever the purchasing man and the administrator join forces, achievement of a high order seems sure to follow.

"There is one point I'd like to make which may help you to sell your good ideas to management. First be sure you are right; that you are on sound ground. dress up your idea; merchandise it; use charts and graphs for visual presentation, and then size up your man from previous experiences. If your project is worthy, well thought out, and ably presented, then management is easily convinced."

#### **Public Relations Important**

Maurice G. Postley, public relations counsel of the NIGP, stressing the need for suitable public relations said that "if ever a man were a gold fish in a bowl, that man is you—the public purchasing agent. Because he knows that he is forever being examined, the public purchasing agent has a wholly understandable interest in what people think of him.

"Good public relations are important to you. Not enough people understand the problem of public purchasing. Purchasing procedures and practices in public agencies are often so complicated that the public purchasing agent scarcely knows where to begin to tell the

whole story.

"Improvement of public relations for all public purchasing agents is not, perhaps the job of an individual. It is a collective task. The growth and vitality of the NIGP is a sign of good things to come. Institute will play its part in helping to earn better understanding for

public purchasing.

"Meanwhile you as an individual can do your bit. You can directly reach many persons with specific answers. You can explain to a user of an item you buy, the hows, the whys and the whats. You can explain to vendors why you have reached your decision, how you did it and what governed it. You can let the public at large know you spend the taxpayer's dollar.

"One of the mediums that you have for helping your public rela-

# DECENTRALIZATION HELPS BIG BUSINESS MEET ITS SOCIAL OBLIGATIONS

• By Don G. Mitchell

President Sylvania Electric Products, Inc.

DURING the war when the producers of this country had virtually but one customer-Uncle Sam—the pressure was constantly on those engaged in governmental purchasing to spread more of the orders among Small Business. Within WPB, an organization was set up for the specific purpose of helping Small Business get a larger share of war work and one by one experienced executives went to Washington full of enthusiasm and, at times, what seemed almost to be a religious fervor, to head up this activity, and one by one they came away with a realization that Big Business was not as much the barrier as those engaged in government purchasing.

Big Business could take orders and deliver because it had the facilities and the engineers and the "Know-how." Big Business was known to be reliable in its commitments and quality. It was less costly and deliveries more certain when orders were placed with a small number of capable large organizations than with a large number of smailer and less well-known companies. Big Business demonstrated that this confidence of the purchasing agents in its ability to perform in the greatest of all our national emergencies was not misplaced.

Buyers who spend other peoples' money, and especially the taxpayers' money, have the serious responsibility of securing the most they can for that money be it quality, price or delivery. They cannot substitute a social concept for material performance without running the risk of justified censure. Nevertheless, governmental purchasers would be less than human if they were wholly oblivious to the more favorable political position of Small Business as compared to Big Business.

What is it that has given Big Business a political black eye? You have to admit that Big Business has contributed greatly to the high standard of living enjoyed in this

country by producing more for less. Big Business, as a rule, has paid better wages than Small Business. Big Business has spent vast sums in research that product performance might be improved and that new materials and devices might be available. In spite of all that Big Business has done to make America great, it has become a popular political target.

Leaving out some questionable practices which no sane man could condone, the major delinquency that can be charged against Big Business is its failure to accept its social responsibility. Don't misunderstand me. By social responsibility, I am not thinking about pension plans, sickness benefits and of the other paternalistic programs that have grown up in our industrial system, but of something much more fundamental

Concentration, mechanization and production lines naturally call for less skill on the part of workers there by giving the individual less and less opportunity to be a personality or to have the incentive to produce more and better. Workers have more and more become separated from management and with it has gone mutual respect and confidence

How many times have you heard it said of a company that had grown big, that the "old man" who started it knew everybody who worked there and could call them by name? No matter how rough or gruff he may have been, he was as a rule greatly respected. He may have been a martinet, but his employees were people and not mere numbers.

Add to this loss of occupational personality the living conditions of a big industrial city, where most of the people live in small and unattractive quarters, and you have the makings of a first-class mass feeling of frustration.

We are concerned today by the growth of communism all over the world. In our country, we are trying to stamp it out by discharging government employees who are stained with red, by a provision in the Taft-Hartley Act, by investigations and publicity. We are afraid of it, and rightly so, but the way to eradicate a disease is to eliminate the cause.

So far, we have left control of social problems, to government but government doesn't cure; especially in a democracy, it merely applies mass soothing syrup. It is a responsibility of employers that cannot be passed to government with any hope that conditions will be improved. Social history is full of proof that the more we leave to government in this area, the more circumscribed and regimented the individual becomes.

My company believes it has a responsibility not only to the economic but to the social welfare of its employees as well as a social responsibility to the communities in which it has factories. We do not believe we can exercise that responsibility in large plants employing many thousands of people as we can in small factories, nor as well in large communities as we can in small or medium sized places. We believe

Address at the Annual Conference of the National Institute of Governmental Purchasing, New York City, September 9, 1947.

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that a program of decentralization is essential if we are to do our share in making this country sterile to the red seeds of discontent.

Let me assure you that this is not just a visionary "do-good" program. It is very realistic and practical. Neither we nor any other progressive manufacturer could afford to engage in decentralization unless it proved itself economically. There are some operations, such as steel and heavy machinery production, that need concentration and, therefore, would not be justified economically in decentralizing manufacturing.

Any loss in the efficiency that comes with centralized coordinated production we feel is more than made up by the improved productivity of the employees in our smaller plants. For instance, we have found a better attendance record, less absenteeism, smaller turnover and greater pride in the work. Supervision in smaller plants being closer to management is better, and better able to pass down policies understandingly. Spoilage is, therefore, less. Production errors can be caught more readily.

Of course, we feel it is possible to carry decentralization so far down the scale of size that it boomerangs. A community, for instance, must not be so dependent on a plant that if for one reason or another it is forced to close down the whole community suffers. It might be far better in such event to help the community to secure more diversified employment.

Diversity of location, though perhaps the most publicized element of decentralization, is, however, merely a means to the end. It is not so much Big Business in Small Places as it is Small Business Principles in

Big Business.

To state it simply, decentralization puts the "old man" back into production. Each plant, in other words, should be of such a size that one man can know everything that is going on and, equally important, know the people who work there. Furthermore, if the program is set up properly, the plant manager is boss. He operates that plant and makes decisions within, of course, the company's basic policies, as though it were his own investment. His is a small business, and the sum of all of them make up the company.

Of course, he has an advantage over independent small businesses in that there are always available to him centralized services, some of which he has to use, such as advertising, because he is not large

enough to do his own, and other services, such as engineering, which he may use when he needs them.

Under a program of decentralization, the policy of the centralized executive division of a company will be more advisory and consultive than directive. Managers will be expected to make their own decisions and to be responsible for the results. With undivided authority, there can be no passing-the-buck. With such a policy, the local manager becomes important to himself, to his employees and to the community. When the newspaper reporter calls, the manager doesn't have to get a release from the central executive offices. He is accepted by the Chamber of Commerce and the service clubs as the head of another business. He doesn't have to get permission to engage in Community Chest, Red Cross or other community drives.

I think you can see that decentralization builds men at the management level. Such men in a large factory would have charge of but a section and would have but a fraction of the responsibility as well as the personal dignity and prestige.

In a small plant, the manager has to live with his people. They go to the same church or lodge, the children to the same school. There is no separate social level, so that there is a closer bond between management and worker. The boss must get along with his people, and the more he is liked the more will the workers try to help him make a success of the operation. After all, you can't bowl on the same team with the boss, or your wife be on the same church committee with his wife, or your son dance with his daughter, and feel that there is any great class distinction.

In that way, decentralization restores a working personality to labor Under those conand a dignity. ditions, work is once more fun and people are happy. Communism can never take root where people are

What appeals to me more, however, is that people in small and undersized communities lead a natural and normal life. They can get to work easily and quickly. Instead of paying for their amusement, they make it themselves and are thus more sociable. They can fish and hunt and work in their gardens. They can play ball or golf or tennis in their own club. There is so much they can do in their leisure time that is clean and wholesome. How easy it is to gripe when you have nothing interesting to occupy your time.

How easy it is under such conditions to get cock-eyed ideas.

People are clean minded if you put them in clean surroundings.

Another interesting phase of decentralization is that people in smaller places have a greater respect for government, and for law and order. In the smaller places, workers can participate in government. We have several such instances in our operations. One man was mayor of his town. People take a greater interest in politics in smaller places and have an opportunity to be on the inside-maybe holding office in a party. Such activities build citizenship. People do not like to destroy that which they are a part of.

Obviously with such a close working relationship between employees and between workers and management, there is less room for misunderstanding. Our labor relations, as a result, are on a much higher level than those in plants where management is far removed from the working force. The number of grievances is smaller and trouble

arises less frequently.

We are confident that decentralization will give the people in smaller places a different concept of Big Business. When folks see that Big Business is but a mosaic of a lot of small businesses operated by men having the same ideals and the same community interests, they will have evidence that it is something inherently good and not the converse.

To you as government purchasing agents this trend toward decentralization should be most intriguing in both its economic and

social implications.

1) With a wider geographic distribution of industry, we are bound to have a more stable national economy with a higher overall standard of living.

2) Labor disturbances are certain

to be less.

3) Improved social attitudes cannot help being reflected in better productivity and quality.

4) Satisfied workers living naturally in clean communities will be a bulwark against the infiltration of non-American ideologies.

5) Political sniping at Big Business will lose its sting as constituencies become better informed.

Yes, Big Business on the whole is good business—good for you as spenders of the taxpayers' money and good for the taxpavers as consumers. This recognition of its social responsibility added to its splendid economic performance will help keep America strong and free from communistic taint.

## THE MERIT SYSTEM

## IN PUBLIC PURCHASING

Application of sound personnel. practices and standards to public purchasing agencies will improve performance and enhance the prestige of buying officers on a professional level

#### By H. Eliot Kaplan

Executive Director National Civil Service League

WITH the billions of public funds involved in purchases of materiel for government needs and usage, public purchasing agencies assume a functional role commensurate with that entrusted only to public servants of high responsibility. Public purchasing, like public finance, depends for its success largely on the integrity and competence of the personnel entrusted with its administration. Our governments, Federal, state and local, have been extremely fortunate in the calibre of talent attracted to the public purchasing field. It is doubtful if the public fully understands and appreciates the extremely valuable services performed by public purchasing agents in the economical and efficient husbanding of the communities' financial resources. An injudicious purchasing program, or one honestly but ineptly administered, can prove costly, and demoralize or even wreck an operating organization.

The public is becoming more conscious of the need for trained technicians and specialists in government purchasing agencies. Indeed, there is emerging, if it has not yet been definitely established already, a new profession of public purchasing agent. Those familiar with governmental practices and needs are aware of the special problems of handling public purchases. The nature of government in a democratic society adds to the burden of accounting with an exactitude and a rigidity of responsibility which is not usually required in private enterprise. One needs but mention the more or less essential red-tape, the increased number of



Hon. Grover Whalen, who served as the first Purchasing Agent for the City of New York, addressed the Governmental Purchasing Conference.

forms, the more precise description of supplies and equipment, and the publicly demanded checks and balances of accountability — administrative and legislative — to appreciate the limitations and restrictions under which the public purchasing agent must function.

Private industry long ago recognized the urgent importance of centralizing responsibility for purchasing and placing it in the hands of specialists. Operating organizations and production management had to be relieved of the burden which under our complex industrial organization had become too great for them to continue to carry. So also has government administration become too complex and expensive for operating departments to depend upon high-grade clerks and technical inspectors untrained in the specialized field of public purchasing.

If my preliminary understanding of the Joseph survey (a study of policies, practices and procedures in public purchasing, by David Joseph, Special Survey Director) is correct, it will probably indicate,

among other things, the particular need for technically trained personnel for government purchasing agencies. If this be so, should not there also be a collateral survey of an equally important phase of this problem—that is, a study of the kind of personnel needed for the unique tasks to be performed; the nature and extent of training for such positions, both within and without the public service; and the proper standardization and classification of positions in this field, so that titles may uniformly reflect the duties and functions of positions throughout the public services? It is axiomatic that no profession can be established without proper standardization of positions, uniform nomenclature as to titles, and specifications as to duties, functions, responsibilities and lines of authority.

Here is where application of sound, up-to-date personnel practices can play an important part in raising the standards of public purchasing generally, and in laying the foundation for the new profession of public purchaser. A merit system designed to recruit and select trained specialists for immediate direction and supervision of purchasing, and also talent for potential supervisors and administra-

Address at the Annual Conference of the National Institute of Governmental Purchasing, New York City, Sept. 9, 1947.

tors, will inevitably raise the level of performance of public purchasing organizations. It will assure appointment of technically equipped men and women for the highly specialized tasks needed to be done, and enhance public confidence in those engaged in that field. It will give the administrator confidence that he will get the calibre of personnel he wants and needs for his own success and for the public welfare, uninfluenced by extraneous considerations.

Properly administered, a merit system of selecting personnel will demonstrate to public officials, to operating departments of government dependent upon the purchasing organization for their materiel needs, and to the general public, that public purchasing is a highly specialized field requiring administrators and supervisors of exceptional quality. It will prove a great asset to those responsible for broad political leadership in public purchasing - a leadership which must above all things ignore partisanship and favoritism of all kinds.

Perhaps we should pause at this point to clarify somewhat our concept of a modernized merit plan of selection. We who have long advocated the competitive system have avoided lunatic fringes. We do not believe that the competitive system should be applied to elective or appointive positions requiring of the incumbent determination of political policy of administration (using the term "political", of course, in its broad sense). We believe, however, that in a highly technical field such as public purchasing, the area for political discretion as to policy is rather limited, and that in most jurisdictions exceptions from competition in other than key positions will prove rare.

Merit system advocates are not wedded to any particular type or scheme of civil service examinations. We view testing techniques as used by personnel agencies only as a means to an end. We advocate a system of testing for public positions approaching as far as practicable the completely devised plans and practices of private enterprise, although we appreciate that public practices necessarily need to be more formalized. We do not, for example, encourage written tests where these are not practical or feasible. An unassembled examination where the candidates merely await their past records of education, experience, and comparative record of accomplishment, implemented perhaps by an oral inter-

view, is often more effective and professionally more acceptable than written tests.

Admittedly, civil service commissions might not recognize how highly specialized has become the field of public purchasing. NIGP can assume leadership in apprising the civil service commissions of the personnel needs of that branch of the service. It can, and should, take the initiative in advising them of the desirable qualifications required and standards necessary to maintain a well organized and properly trainable staff of purchasing technicians, supervisors and administrators. It should proffer its aid to the personnel agencies in developing proper salary standards, specifications as to functions and responsibilities of positions, uniformity of titles and recruiting and examining practices and procedures.

The personnel agencies need and would welcome the Institute's assistance toward gaining the objective of attracting and maintaining in the purchasing services the best talent the public can afford. The NIGP has made great strides in professionalizing public purchasing and in raising standards of performance. It has an equally challenging opportunity to add to its laurels by performing a further public service—the encouragement of persons who possess the proper talents to seek opportunities for service in governmental purchasing

agencies.

It can undertake its own studies of improved methods of selection and other personnel practices in its own field, as have the American Public Health Association, the American Library Association, and other professional associations. These studies can assist its own members, as well as be of great aid to the public personnel agencies in keeping their personnel practices up-to-date and within practical spheres. Here is a public education program which the NIGP can undertake with confidence that it will prove an important service to the purchasing profession and help solve some of the perplexing problems within its own field.

Take, for example, the problem which has, I am sure, often confronted purchasing administrators -that of whether any engineer, chemist, or other professionally trained scientist or technician can be selected and assigned as a purchasing agent or supervisor in his particular scientific or professional field, without specialized training in the art and technique of public

purchasing. We know from experience that not every scientist, no matter how eminent, turns out a howling success as a supervisor, much less an administrator, when assigned to assume that role in the organization. Would it not be a fruitful field of study by some competent committee of the NIGP to inquire into the potentialities of training prospective engineers, chemists and other scientific and technical experts in collateral problems of public purchasing?

The universities would undoubtedly be receptive to valid suggestions of methods of enriching their curricula for those graduate students seeking additional training in the specialized field. Such a study might possibly persuade the NIGP to undertake an in-service-training program of its own for newly appointed personnel in the purchasing profession; or what is more probable from a practical point of view, coordinate in-service-training programs in the various state and municipal jurisdictions. I am sure regional or local universities and educational agencies could be enlisted in such a program.

In seeking to raise the personnel standards of public purchasing agencies, the NIGP will have the whole-hearted support of professional and non-professional groups in the public service who look to the purchasing department for the equipment, supplies and other materiel which their own scientific and technical personnel need to assure success of their operating and re-

search programs.

A large number of jurisdictions have already recognized the essential need of a sound merit system in staffing their purchasing agencies. The trend toward higher standards of accomplishment and performance in that field make the application of modern personnel practices there imperative. The Chief Purchasing Agent for the City of Los Angeles, for example, is now selected on a competitive test basis. The NIGP is the logical agency to promote a practical program of establishing purchasing agencies in government on a merit system career basis. In doing this it will not only fulfill its recognized public responsibility, but will enhance the prestige of its own members as well as that of the profession of public purchaser. It can set the stage for the development of a corps of career public servants in the public purchasing agencies of enduring value to the taxpayers, such as well might be the envy of other professional classes.

## **BUYING FOR THE UNITED NATIONS**



Here is a job that involves many unusual factors and requirements, but the basic principles of sound buying are the same

By F. A. Mapes
 Director, Purchase & Supply Division
 United Nations

NOT VERY LONG ago, I was doing purchasing work as a Federal Procurement Officer. The problems were familiar ones. There was the never ending stream of purchase schedules and amendments in the incoming mails, new or revised purchasing regulations, problems with administrative rules; and with it all was the ever-present shadow of the Comptroller General, who stood ready to "crack down" if any of his decisions appeared to have been transgressed. For the past 18 months, I have been associated with purchasing for the United Nations.

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Before telling you what our Purchase and Supply Division is like, what it does and how it operates, it might be well to look for a moment at the rest of the United Nations organization which it serves, for the character of that organization goes a long way toward giving the tone and color, as well as the general structure to the Purchase and Supply Division.

The organization which we serve is known as the Secretariat. The entire Secretariat is itself a service group. It is the "pick and shovel" crew which assists the General Assembly, councils, committees, and

commissions in their attempts to guide the political, social, and economic affairs of the nations in a peaceful world. The organization of the Secretariat is similar to most any other organization. It is divided into Departments, Bureaus, Divisions, and Sections, which have their individual duties and responsibilities.

The Secretariat provides the places in which the delegates meet; it schedules the meetings, provides the tables which the members use and the chairs in which they sit, the pitchers and tumblers they use and the water they drink, the pencils they write with and the pads on which they make notes. It provides facilities for use of the press and the public to hear what the delegates say. It arranges for cable facilities, radio broadcasting facilities, and motion pictures, to carry the words and actions of the delegates to all parts of the world.

The interpreters, too, are mem-

bers of the Secretariat. It is their job to translate speeches made in Chinese, Russian, or Spanish into English and French; for U. N. is bilingual in having two working languages. In some of the council chambers a system of simultaneous interpretation, similar to that used at the Nuremberg trials, is used, and spectators as well as members of the councils don head phones and switch a dial to tune in English, French, or any one of the other three official languages — Chinese, Russian, and Spanish.

The Secretariat also provides many other things, such as paper for the printing of reports and other information; it arranges for printing, binding, and distribution of publications. It sets up offices in various cities throughout the world and provides personnel, equipment, materials and supplies to operate such offices. It handles the preparation of exhibits and arranges for export shipment and further distribution of such materials.

Of course, it performs many other specific functions, but these brief references will give an idea of the part that the Secretariat plays in the over-all picture of the United

Address at the Annual Conference of the National Institute of Governmental Purchasing, New York City, September 10, 1947.



Meeting of the U. N. Security Council. Furniture, desk supplies. recording and broadcasting equipment, and even the drinking water at the Council table, are responsibilities of the Purchase and Supply Division.

Nations. The Secretariat now numpersons, and bers about 3,000 occupies about a million square feet of floor space at Lake Success. The Purchase and Supply Division is a part of the Secretariat. It is also the Secretariat, primarily, that it is designed to serve.

#### Development of U. N. Purchasing

The idea of the Purchase and Supply Division was planned, as were all the other functions of U. N., by the preparatory commission which met in London in the autumn of 1945. At that time, provisional committees made up of delegates of 51 nations were assigned various parts of the plan for an international organization as contained in the U. N. Charter, and were delegated the task of recommending the framework for the organization.

Specific details for purchase activity were drawn up by an advisory committee of experts on administrative matters. The plan which emerged and was authorized by the General Assembly included provision for the Secretariat administered and directed by a Secretary-General and consisting of eight separate departments each headed by an Assistant Secretary-General. These departments were designated as: Trusteeship, Security Council Affairs, Social Affairs, Economic Affairs, Legal, Administrative and Financial Services, and Conference and General Services. Purchase and Supply activity was designated as a Division under the Department of Conference and General Services, and, although the Assistant Secretary-General charge of this department is, by action of the General Assembly, charged with contractual responsibilities for the entire organization, he has delegated these powers to a substantial degree to the Director of the Purchase and Supply Divi-

Regulations implementing the acts of the General Assembly were issued by the Secretary-General.

#### Comparison with Public Purchasing

How do these regulations compare with rules and methods generally found in public purchasing? Well, using the purchase of standard office equipment and supplies as an example, the action we take is almost identical with usual public purchasing methods. The Federal buyer, and most buyers for public agencies, have schedules for most of these needs. We do not, except as we develop term contracts, but the action we take is similar to that which the Federal man would follow if the item were not obtainable from a schedule. We employ competitive bidding designating the property desired and (except for items authorized on a proprietary basis) request quotations using detail specifications or the familiar term, "brand name or equal". We send out formal proposals where quantities warrant and time permits. Or, if more expedient, letter bids are invited.

For small quantities, generally less than \$100, competitive bids are obtained by telephone. Telephoneone-bid awards are made only when the article or service desired is proprietary or is handled by an

exclusive dealer for a manufactur-

In speaking of formal proposals, I refer to a bid form similar to the Federal Short Term Contract. As a matter of fact, our proposal was patterned substantially after the Federal bid form. Bidding lists are maintained. We have public opening and reading of all formal bids. Where services desired are of a professional nature, as in the case of art work, preparation of research or scientific reports, or verbatim reporting service, the details outlining the services and material to be furnished, terms and conditions of purchase, the consideration, and related information are formalized by contract. Transactions of this nature are generally negotiated, the governing element being: "Is the service worth the price the con-tractor is asking?" Basically, therefore, our handling of purchase transactions is similar to the procedure generally used in public purchasing.

In all public purchasing there are controls. In the United Nations, the governing regulations are issued by the Secretary-General, and all purchase transactions are checked by the Office of the Comptroller. A staff known as External Auditors, the key personnel of which are appointed by the General Assembly from among the Member Nations, is authorized to audit all transac-

tions.

Specifically, our purchase regulations provide that a written statement of award be made explaining all purchases which result from competitive bidding. An explanation of award is also required in all cases where a contract involves payment of \$1,000 or more. Where an expenditure of \$5,000 or over is contemplated, procurement arrangements must receive prior approval by a Board known as the Committee on Contracts. The Director of the Purchase and Supply Division is chairman of this committee: other members consist of one representative of the legal staff, a member of the Comptroller's Office, and a member of the staff of the Assistant Secretary-General (Conference and General Services) to act as secretary of the Board. The board convenes as necessary, and is supplemented by such other purchasing personnel or Secretariat members as may be helpful in the particular field of the transaction under consideration.

The Purchase and Supply organization consists of four separate parts: Standards Section, Purchase Section, Stores Section, and Administrative Section. Like other departments in U. N., our staff is made up of people from many nations — Canada, China, England, France, the Netherlands, New Zealand, and Norway.

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The Standards Section functions between the requisitioning people and our buyers. Its primary responsibilities are to develop specifications and standardize types of supplies and equipment to permit greatest flexibility and interchangeability of property throughout the organization. It serves as a ready source of assistance to requisitioning people, affording them expert advice on methods and equipment available to accomplish special operations. Requisitions clear through the Standards Section for development or clarification of specifications before the Purchase Section takes its action.

As for the Purchase Section, we have already described its techniques and regulations. The matter of anticipation of needs - a theme constantly stressed by our staff as by purchasing people everywherefinds unusually "tough going" at U. N., for many understandable reasons. In the first place, except for office supplies and other items for which there is a continuing use, the very nature of U. N. operations prevents much anticipation of needs. It is generally only after councils or assemblies have met and decided upon a project to be accomplished, that anyone can be really sure of what the project requirement will be. Then, likely as not, time is of the essence, and the machinery of purchasing must gear itself to meet the circumstances. Naturally, such conditions at times prevent the kind of purchase action which would be most desirable, and our only recourse is to do the next best thing-accomplish to the best of our ability contracts that will be most advantageous to the interests of U. N.

Our Stores Section has the responsibility of receiving all shipments consigned to the Headquarters at Lake Success. It inspects such shipments against contracts or purchase orders, and prepares receiving reports accepting or rejecting the items. Where items are rejected, the case is handled by the Purchase Section. Accepted items are delivered to the requisitioner. Where stockroom items are received and accepted, the shipment is delivered to the stockroom and appropriate notation of receipt is made on our control records. All issues from the stockroom are similarly recorded, and on the basis of receipts, issues, and balances, a three-month supply of items is maintained.

Our Stores Section also performs all shipipng work for U. N. at Lake Success. For example, during the past few months, exhibits containing 150,000 display panels, posters, and other materials were developed at U. N. Headquarters and shipped for use in many other

countries.

The Administrative Section performs the usual administrative functions. It handles all personnel matters for the Division, makes reports and analyses, handles procedural matters, budget matters, and similar duties. In addition, it is responsible for maintaining all records and controls of non-expendable property.

#### Characteristics of Purchasing

The actual business of purchasing for U. N. has been a rapid evolution from one group of unusual conditions through a whole series of changed circumstances. Among our first problems was the need to quickly establish an efficient system of documenting and controlling transactions. At the same time, badly needed materials and equipment had to be obtained to meet the requirements of a rapidly growing organization. In the beginning we had neither office space nor the specialized personnel to carry out a purchase program. Our staff was pitifully few in number. Most of them were on temporary loan from some Federal agency. They used some Federal agency. their hotel rooms as offices and their brief cases as files. Fortunately these conditions did not last long, for the City of New York made the facilities at Hunter College available to U. N. Additional temporary staffs were acquired and gradually replaced by personnel chosen to be a part of the organization.

There was an urgent problem of obtaining hundreds of desks, chairs, files, typewriters, and other types of office equipment, as well as trainloads of paper of various sortsall at a time when the markets were in extremely short supply. In this critical situation we were blessed with Public Law 384, which permitted agencies of the Federal Gov-

(Please turn to page 342)

Partial view of the Purchase and Supply Division office. The working force, like the U. N. itself, is an international organization.

A steady flow of supplies is required to keep the work of the United Nations going.





OCTOBER, 1947

## **INCREASING TAX DOLLAR MILEAGE**

### BY CENTRALIZED PURCHASING



By J. W. Nicholson
 City Purchasing Agent Milwaukee

THE Public Purchasing Agent's position is so vulnerable to attack and criticism that, to paraphrase Gilbert & Sullivan, "Taking one consideration with another, a purchasing agent's lot is not a happy one." Nevertheless, we all take great pride and pleasure in our task of increasing the mileage of the tax dollar, and our reward is the respect of our employers and fellow purchasing agents, and the personal satisfaction that comes from having accomplished our duties in an exemplary manner.

The first item in this report represents millions of dollars invested annually by our communities, namely, fire fighting apparatus. For a number of years some large cities have purchased fire pumping engines and aerial ladder trucks on standard specifications and competitive bids awarding contracts to the lowest competent bidders. Equipment purchased in this manner has exceeded Board of Fire Underwriters' minimum requirements. Thousands of dollars have been saved by this competitive system of bidding.

There is no reason why this fire fighting equipment should be purchased on sales talk at much higher prices. There is no reason why it should be tailor-made. There is a wealth of evidence showing that the tax dollar will go much farther when buying is competently organized and centrally controlled

On a recent request for bids on a 75 ft. aerial ladder truck, Milwaukee received a declination from a large concern who advised: "Our factory management informs us that your specifications and requirements diverge from our standard construction and procedure to the extent that a bid from us is not possible." As a matter of fact our specifications were wide open and any firm could bid if they had cared to.

This manufacturer will not quo'e unless we adopt his specifications. To do so would eliminate all competition. A competitive open type of bid is the only proper procedure to follow if the taxpayers' interests are to be protected.

Edward E. Wischer, chief engineer, Milwaukee Fire Department, has proposed a United States technical fire fighting service. At present there are communities whose security is based on apparatus and equipment which is absolutely of no practical value because the apparatus and equipment was sold through "slick" salesmanship or bought with insufficient knowledge of all factors involved. If these recommendations for the standardization of fire apparatus are carried out, fire fighting equipment will be constructed efficiently and economically and will be designed primarily for the effective fighting of fires instead of for display at firemen's picnics and parades.

Fire hose is a substantial item on which large savings can be realized if purchases are made on specifications. Many cities including my own have purchased fire hose on sealed bids using Board of Fire Underwriters' specifications. Our fire hose has given excellent service and lasts from 13 to 15 years. Any short-sighted fire chief who advances the time-worn and hackneyed argument that he will not be responsible for results at fires unless

he gets the make of branded hose he wants should be fired. Many thousands of dollars can be saved if this procedure is followed.

Taxpayers' money can be saved by reporting suspected collusive bidding. As a result of such reports of public purchasing agents, Federal complaints are now pending against manufacturers of fire alarm, mimeograph and chlorinating equipment; also against manufacturers of surgical dressings and business forms.

business forms.

Edward P. Hogges, special assistant to the Unted States attorney general recommends that public purchasing officials do all they can to forestall monopolies. "They should", he said, "investigate all identical bids and be suspicious when only one bid is received. Specifications should be drawn by disinterested parties and care should be taken to prevent insertion of language which has the effect of excluding all but one concern from bidding."

In connection with the acquiring of special automotive, shop or other mechanical equipment, it is desirable for the purchasing department to have on its staff or available on call, a good all around mechanical engineer so that money can be saved by purchasing equipment completely suited for the work required of it. Our staff mechanical engineer designs all special equipment on which there are no accepted national standards. One of his designs covers a combined police ambulance and patrol with two-way radio. This type of vehicle takes the place of two vehicles and has served so satisfactorily that several others have since been purchased. Also, other cities have shown an interest in it.

At times you are required to spend large sums for other special types of mechanical equipment. Our city recently decided to purchase 46 mobile garbage collection units having a capacity of not less than 12 cubic yards each. To save money we decided to buy special bodies. Specifications were prepared and bid forms sent to five experienced firms. We arranged for a 30-day field test. Two concerns participated and the tests proved that each of these two makes of equipment would do the same work at approximately the same cost. When the formal sealed bids were opened, one bidder was \$571 per units lower than the other. A purchase of this type and magnitude could have easily developed into a political football, with no holds barred. Instead the purchase was made on the basis of an intelligent approach to a scientific problem and a saving of \$26,-289 or approximately 20% was made.

A county purchasing agent states: "For many years fuel oil was delivered to our county hospital in tank trucks. We use 2,500,000 gallons per year. The contract carried no 'temperature clause.' As a result the fuel oil was being delivered on a straight cost per gallon basis at temperatures ranging from 100° to 130°. The normal ASTM standard of acceptance is 60°. In 1944 alone the county saved \$6,000 by revising its specifications to include temperature adjustment clauses."

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Another county purchasing agent recommends that purchasing agents specify that cuts and dies furnished and used by printers in job printing become the property of the purchaser so that on future purchase of these forms one printer does not have a 10% or 15% ad-

vantage over another.

Cash discounts represent a potent means of saving tax dollars. These discounts should be requested when obtaining quotations, and bid forms should include a statement that the cash discount is considered in determining the lowest responsible bidder. If you specify that cash discount is to be quoted on the basis of 10th proximo from the receipt and acceptance of the goods, you have an opportunity to examine the goods before acceptance and still take the cash discount. While private companies, in dealing with responsible sources, frequently pay invoices before goods are received, it is generally illegal for state, municipal and other public agencies to do so. The goods must be in the possession of the purchaser before payment can be made. You are entitled to a

cash discount even if the vendor fails to make complete delivery within the specified time. The discount can be taken on or before the 10th proximo after the last

satisfactory delivery.

Many purchasing departments make a study of equipment requisitioned by departments in order to determine the proper quality needed and the suitability for the purpose intended. By purchasing medium quality in place of top quality letter files for service where these cabinets are not in constant use, a saving of 50% has made by a university purchasing agent.

A county purchasing agent obtained bids on a large display rack. The type requested cost \$1,150. The lowest bid on an identical rack was \$650. The using department pronounced it equal in all respects. This saving of \$500 is clearly credited to effective centralized purchasing. Office furniture purchased on bids also saved this agency 20% to 40% of the prices paid before the establishment of a central purchasing agency.

A state purchasing agent reports savings by taking competitive bids on identical equipment made by a single concern. He advertised for a brake-drum lathe equivalent to a specified make and received eight bids on the identical equipment for approximately the same delivery, with prices varying from \$1,029 to \$1,516.16 each. The saving was approximately 32%.

A county purchasing agent warns against "brand name" purchasing, as the saving on specification buying is great. He cites examples of buying flags, janitorial supplies and chemicals by specifications which were formerly purchased on brand names, at 300% to

400% higher prices.

Contrary to the usual opinion, all types of insurance needed to protect public treasury funds and other property can be obtained on competitive bids with savings as high as 70%. Purchasing some types of insurance such as safe, vault, elevator and messenger on a 3-year instead of 1-year basis also results in further savings. Safeguards can be taken to eliminate irresponsible companies.

#### Storehouse Control

Large savings are brought about by centralizing the control of all storehouses under the jurisdiction of the purchasing agent. This was recently accomplished in Milwaukee.

The benefits are many, among them being an overall reduction in the amount of goods carried in stock in various storehouses and yards; the purchase of goods in such quantities as to command wholesale prices; adequate inspection; the transfer of goods unused and unneeded from one department storehouse to another; suitable storage of materials, and the elimination of loss through pilferage, obsolescence or decay.

The centralization of the custody, transfer or disposal of unneeded discarded or obsolete supplies and equipment and the sale of scrap materials under the authority of the purchasing department also saves thousands of tax dollars. Many public purchasing departments, including our own, have complete charge of this function. We have factual evidence in Milwaukee that many years ago, prior to the centralization of this function, thousands of dollars were lost annually because scrap materials and discarded articles disappeared surreptitiously.

#### **Combining Departmental Purchases**

We should take advantage of every opportunity to pool with our purchases those of as many independent boards, commissions and other public agencies as possible. The more we buy, the lower the

price.

Several city purchasing agents state that material savings have been effected in the purchase of lubricating oils formerly purchased on open market. Much of this oil is now purchased on competitive bids using the United States Army specifications developed during World War II. Savings of 50% have thus been made.

By using specifications, reputable firms will deliver their premium branded oils in drums, at prices considerably below those established for their regular trade because this does not expose their cut in price. Also, 4,000 gal. gasoline transport deliveries to your large underground tanks can be made at the same price as tank car deliveries to your bulk storage tanks. Savings of approximately 1½c per gallon more are possible if car lots are stored and redelivered with the purchaser's equipment and employes, or if contracts are let for yendor's tank truck deliveries.

Abstract of an address at the Annual Conference of the National Institute of Governmental Purchasing, New York City, September 8, 1947.

Coal requirements of all departments, boards and commissions, should be purchased on an annual contract which combines the requirements of all using agencies.

Combining official advertising is followed by many purchasing agents to reduce advertising costs. For instance, a single advertisement which contains information duplicated in the specifications usually costs about \$35. for six days' insertion. By eliminating these unnecessary details of specifications, this cost can be reduced from 6 to 10 dollars for each advertisement; additional savings can be made by including other items of purchase not necessarily related.

Here is an advertisement covering many unrelated items: "Official Notice C.P.-28. Office of the Central Board for Purchases, Room 506, City Hall, Milwaukee, Wis., Oct. 16, 1946. Sealed proposals Sealed proposals will be received at this office until 10:00 A.M. for furnishing liquid chlorine, power sewer cleaning machines, tractors with bulldozers, binding of fire department training manuals, library book-stack equipment, and machining of manhole frames and lids, in accordance with specifications and contract form on file in this office." This short advertisement complies with the law and saves many tax dollars. Bid forms and specifications are of course sent to lists of eligible bidders and cover the items in which they are interested.

#### Trade Discounts

Trade discounts should be deducted before deducting Federal excise tax so as to receive the greatest trade discount. when purchasing all types of equipment, bid forms should request "Discount from list on repair When the cost of repair parts is considered in the award of equipment contract, higher trade discounts are usually offered. Discounts for parts are usually requested on the basis of the factory's nationally published price list and are requested on the basis of the factory's nationally published list and on the basis of one year's time from delivery of equipment.

Public purchasing agents are now selling old typewriters and other office equipment instead of trading it in. Old typewriters are now quoted at \$2.50 to \$10 as trade-ins, but can be sold from \$35 to \$40 each to those who make a business of repairing and reconditioning them. Likewise, old cars

and other automotive equipment can now be sold direct at much higher prices than they bring on trade-ins. A prominent city purchasing agent finds that better prices are obtained by dressing up old cars instead of stripping them prior to sale.

#### "Post-Facto" Purchasing

"Post-Facto" purchasing is not countenanced by red blooded pur-chasing agents. If any unauthorized purchasing takes place they refuse to pay the bills and send them back to the department which Here is a violated their rules. classic example which is worth mentioning: A city purchasing agent received a requisition from the secretary of a motion picture commission reading as follows: "1000 letterheads as per attached invoice." Attached was an invoice totalling \$98.52 or almost 10c apiece. At that time they city had a contract for letterheads at \$4.50 per thousand. The bill was returned and the chairman of the commission paid it out of his own pocket.

#### **Excise Tax Exemptions**

Great savings can be made by taking advantage of Federal excise tax exemptions. These taxes range from  $3\frac{1}{3}\%$  per kwh on electrical energy to  $25\frac{1}{2}$  on photographic equipment, telephone and telegraphic services:  $1\frac{1}{2}$ c per gal. on gasoline to \$200 for a boat stamp tax. There are 41 separate catagories of Federal excise taxes.

As state and local units are exempt from paying these taxes, every employee of the purchasing department having to do with the contracting for materials, services or the paying of bills should have a list of these taxes before him There are cases where constantly. officials of independent boards and commissions were traveling at the expense of the city and were paying the transportation tax, which amounts to 15%. A refund of these and other similar expenditures can be obtained by filing evidence of each transaction with the local offices of Internal Revenue. Some firms still add Federal transportation tax on merchandise consigned to states and local units of Government. They should be notified that public agencies are exempt from the payment of this tax.

A great deal can be saved by reducing the number of small orders. It is best to make an analysis of the number of small orders issued, such as orders up to \$10, and

to see what can be done about combining them. For instance, public utility bills can be combined.

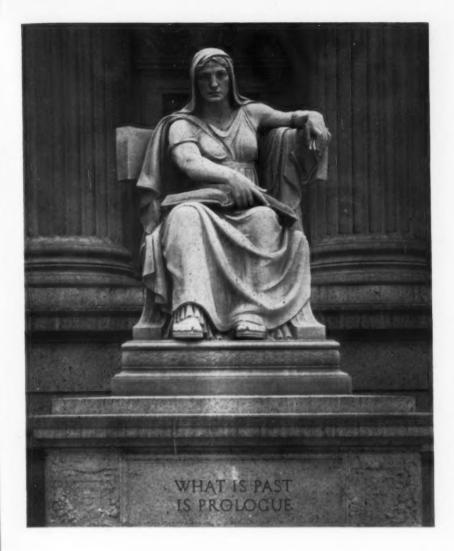
It is important to buy from the right vendor. Many telephone offers must be obtained these days especially for small and scarce items. Purchases should be made wherever possible from those vendors whose major sales are of the materials in question. If sal-soda is purchased from a wholesale chemical firm the price should be in the neighborhood of three cents a pound, but if it is purchased from a firm which makes boiler compound, the price would probably be 12c per pound. The same is true of automotive accessories and many other stock items.

Knowledge of markets is important. The purchasing director of a large city reduced the cost of 600 folding chairs from \$32 per dozen, a formal bid which he rejected, to \$26 per dozen on informal bids, or a saving of 15% due to careful attention to market conditions. His department also rejected formal bids on pharmaceuticals, and purchased the same commodity on informal bids at half price, saved  $33\frac{1}{3}\%$  on phosphoric anhydride by purchasing in 3 lb. instead of 1 lb. bottles; and 15% in the purchase of clothing by buying yard goods and farming out the tailoring.

Our colleagues agree that buyers should study market conditions. The late Joe Mills, former purchasing agent, City of Detroit, kept commodity charts and briefed his buyers frequently on market conditions. Now that these commodity charts are readily available from commercial sources together with other market information, it is not necessary for each purchasing agent and his staff to maintain their own charts. Your buyers should understand that the law of supply and demand has never been repealed.

In requiring bid bonds, it is advisable that arbitrary amounts of bonds and cash be fixed for each individual purchase, rather than placing these on a percentage basis of the amount of the prospective bidder's offer. This will eliminate possible connivance of employees in the office of surety companies. Sureties with bids and cash deposits should be set by the purchaser in an amount which will not work a hardship on legitimate firms, and still protect the buying agency against irresponsible firms. The cost of bid deposits adds to

(Please turn to page 344)



There's a rhythm in business and economic behavior that strongly indicates probable trends and timing, helping the business man to adjust his policies to the business tide

By Grey Leslie

"What is past is prologue," says the inscription on the National Archives Building in Washington. Within are the records of past experience which, according to some economists, embody the pattern of things to come.

## CYCLES —

## THE SCIENCE OF PREDICTION

MORE than a century ago, Georg Wilhelm Friederich Hegel in his Philosophy of History wrote: "Peoples and Governments have never learned anything from history, or acted upon principles deductible from it." Now, in 1947, appears a book entitled "Cycles—The Science of Prediction," by Edward R. Dewey and Edwin F. Dakin (Henry Holt & Co., New York. 225 pp. with appendix), which refutes a goodly portion of whatever truth there once may have been in Hegel's generalization.

It will be generally admitted that the American business man has been more thoroughly "warned" in the past two years than at any other time in our history. Economists, commentators, publicists, and politicians (both elected and prospective), have all added their variations on the same general theme. There is a great deal of repetition in these warnings, which seem to be based for the most part on apt but rather meaningless alliterative slogans like "Boom and Bust". Perhaps this reflects some weird belief that business men are constitutionally obtuse, or that they can't understand economic cycles and trends. Chiefly, however, their fault is that they are not supported by concrete evidence, and that they do not contribute anything in layman's language that might be ana-

lyzed by anyone unskilled in the professional sense.

As responsible a spokesman as Raymond Rubicam, Chairman of Research and Policy for the Committee on Economic Development, has recently stated that it was his belief that the people of the United States had lost the benefit of two hundred billion dollars worth of goods and services as the result of idle machines and men since 1930; and he estimates that much of this stupendous loss might have been avoided by simple economic measures taken in time.

Observations like this, from such responsible sources, shock us into a realization that we must increase

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our knowledge of our American economic system, not only in terms of our own company, or even our own industry, but of its integrated whole.

Messrs. Dewey and Dakin illustrate their thesis by means of charts and graphs, which, in their expert hands, become easily understandable and practical working tools. They exemplify the old Chinese maxim that one picture is worth a thousand words.

The authors are not without a warning or two of their own, but their warnings seem to have the ring of true metal, a reassuring authenticity. Before initiating the reader into their chart and graph

readings, they say:

"The businessman is going to have to anticipate depressions, and plan for them wisely or suffer unprecedented penalties. In the years when our economy was expanding rapidly, a businessman might make very faulty judgments and yet be saved from disaster, or even thrust into success, by the sheer momentum of the national growth. If he failed to sense the coming of a depression, or to time it accurately, why worry. Even the depression bottom was higher than the peak of a few years before. This situa-tion is no longer true. It has not been true since 1918. A greater preminum than ever before is imposed on the ability to time the turns in the business cycle correctly."

That is where the historical pattern of cycles and the inestimable value of being able to spot the cyclical rhythm of business activity

The idea of presenting business as an organism, subject to cyclical reactions, is always fascinating. The authors' apt use of analogy adds wholesome vitality. For example, in examining the causes of this 1929 collapse, here is a comparison in language that any intelligent layman can readily understand: "As a man may suffer from many ills and yet for an indefinite time lead a vigorous life without being inconvenienced by them until, when his general vitality has ebbed away, those ills or any one of them may suddenly acquire what to the specialist's eye will seem paramount or even of fatal importance; so the economic organism always does bleed from many wounds which it bears lightly in three out of four cyclical phases; and which spell discomfort when one cycle, distress when two, catastrophe when all the cycles are in the depression phase.

The book will offer small com-

fort to the disciples of Spengler who are perennially disappointed that the tocsin of doom for Western civilization is so muffled. Dewey and Dakin by no means indicate that the economic road ahead of American business is strewn with honey and roses; but they do make it clear that knowing where we have been may be the best clue to where we are going, and knowing the size and force of the wave about to hit us may give us a chance to breast or ride it. There are sane warnings here, but they are without a trace of doleful prophecy. Neither is there a trace of cheap optimism or complacency.

The stimulating thesis of this thoughtful book is the possibility of adopting, for business activity, some of the methods that have proved their worth and soundness in scientific prediction in certain areas of natural science. Definite, identifiable cycles of regular duration, recurring in varying time periods have been selected and graphically elucidated. As the age of a tree can be positively determined by ring formations, and the rate of growth related to the cycle of rainfall, so the rise and fall of business can be measured by appropriate business cycles.

Four basic cyclical patterns are analyzed from authentic and adequate data to confirm their validity. First, there is a fifty-four year rhythm in wholesale prices; second, a subordinate nine year rhythm in wholesale prices, pig iron produc-

SS'T PURCHASIA AGENT

You're on your own, now, Jack, but you'd better let me Okay everything over \$10.00!"

tion, industrial activity and security prices; third, a three and one-half year rhythm in business activity and security prices; and fourth, an eighteen year rhythm in real estate activity and related construction industry.

The authors believe that the American economy is nearing its maturity. Boldly stated and irrefutably supported in their terms, a conclusion like this will deflate hordes of professional dinner orators. It will deny them the comfort of cheap and sure-fire applause for an optimism they have never bothered to justify. The analysis of historical data reduced to chart form is convincing and conclusive. The authors claim that: ". . . maturity has been or is being reached throughout our economic fabric as a whole. In the light of the charts any talk of the unlimited frontiers that lie before us is a pure expression of faith and hope. The statisti-cal evidence does not support it. Like goldfish nibbling at the glass of their bowl, we have demonstrably been reaching the circumference of our economic world as it is. This is not a tragic fact; it is merely a fact. We may adjust ourselves to it well or badly.'

This is rather a sobering sermon, albeit a much needed one.

The authors choose a timely theme for their section concerning They certain economic illusions. strongly urge objective thinking by shedding some of our preconceived notions and prejudices that frequently prove encumbering. What they suggest, in effect, is a study of the evidence with the same impartial eve that one would apply to a laboratory microscope in a scientific spirit. One properly approaches a microscope with a background of experience to help in seeing all that is to be seen on a slide; one does not bring to it a preconceived notion of the conclusions to be drawn.

The book makes no pretension to explain causes. It condenses the historical experience of hundreds of economic cycles and explores the probabilities of tomorrow. However the predictions may be qualified or modified, they have the probabilities on their side.

agents who read Purchasing "Cycles" will find that it is not a top-shelf book. It will be kept within convenient reach for frequent It will serve as a consultation. handy-man for expert analysis of past performances, and as an experienced pilot in charting new courses.

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#### PRODUCT DELIVERY INFORMATION

 ${f R}^{
m EPORTS}$  of "immediate delivery" or "stock" continue to be received from manufacturers in several lines. As products are reported immediately available, they are dropped from the lists below.

Major industrial product delivery improvement this month, according to information supplied by manufacturers, is in the power industrial truck field, lead time in some cases being cut by months. Little or no change, however, is reported in electrical products, fasteners, tubing, wire and other products.

DELIVERY TIME

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Purchasing, production and planning departments, and also the sales department will find this data of practical value. It is not only a guide to determining minimum inventory and ordering time under present conditions, but also indicates the need for obtaining specific information from vendors as to actual delivery time in order that production and sales may be geared accordingly.

Especial attention is called to the fact that the indicated delivery time in many instances is the range of delivery reported by several manufacturers.

**DELIVERY TIME** 

Special Order

Standard Products	Special Order	Standard Products
AIR COOLE		CHA
10 months  AIR EQU	15 months IPMENT	Stee 1 to 12 months
Compressors,		Malleable Ir 10 to 30 months Machine Finis
2 weeks	Vacuum 2 months	18 to 24 months
ALUM	INUM	CHEMI
3 to 4 weeks  Sheet & Co  Extru	4 to 5 weeks	Carbolic Tight: Annual production of Shipments restricted to cust
4 to 6 weeks	4 to 6 weeks	* * Same Nitric Acid — S
2 to 4 weeks	3 to 5 weeks	* * One company reports the
AUTOMATIC Immediate — 3 weeks		Formald
	1 to 6 months	Very short supply. Canno
BEAR Ball Ba		Chemical Proce
3 to 4 months  Bearings	4 to 6 months	CLEAN
3 to 4 months	4 to 8 months	Parts Cl
Stock Bearings,	12 to 14 weeks, depending	10 to 30 days
	upon type and quantity.  10 to 24 weeks, depending	COATING EQUIPMI
Pillow	upon type and size.	6 weeks Booths, Spra
9 months	12 months	6 to 16 weeks
BELT		Paint Spraying 12 weeks
2 weeks	ther 3 weeks	CONTA
Stock to 2 weeks	on Belting 2 months	Bags, I
Flat Transmit	ssion, Rubber 4 months	30 - 60 days
V-Belts,	Rubber 12 weeks	Boxes, Co.
BRASS	RODS	Current reports indicate th
Stock-30 days	uges over .016)	more abundant, and that in made in standard sizes of c
2 to 3 weeks	— —	Boxes, So
	PARTS	8 weeks Boxes, Fibr
2 to 3 weeks	Bronzes 3 to 4 weeks	12 weeks
2 to 3 weeks	3 to 5 weeks	Boxes, Pape
2 to 3 weeks	ze Castings 3 to 4 weeks	Prompt Cleated Plyw
1 to 2 weeks	nze Castings 2 to 3 weeks	8 weeks  Boxes, W
	SHES	Warmed and a second
1 to 3 weeks	Driven 4 to 8 weeks	Manufacturers report some but overall picture is impre
	Rrushes	Roras I

4 to 8 weeks

CHAIN	
Steel	

1 to 6 months ron Chain 14 to 36 months shed Roller

#### CALS

Acid committed under contract. tomers' monthly quotas.

Sulphuric Acid

hat shortage of carboys has than acid shortage.

dehyde ot accept additional orders. ess Equipment 16 months

#### NERS

leaners

8 to 12 weeks

#### ENT, INDUSTRIAL

10 to 24 weeks ay Painting 12 to 16 weeks g Equipment 24 weeks

#### INERS

Paper 60 - 90 days (also, spl. orders not accepted) orrugated

hat corrugated cartons are mmediate deliveries can be cartons by some companies. lid Fibre

Spl. orders not accepted re, Cleated 2 to 5 months (also, spl. orders not accepted) er, Folding 6 months wood, Shook 6 weeks irebound

10 days shortages of wire continue, but overall picture is improved.

Boxes, Wooden 2 months

1 to 2 weeks

Maintenance Brushes

3 to 4 months

Standard Prod	DELIVERY TIME ucts Spe	cial Order	Standard Produ	DELIVERY TIME	pecial Order
	Crates, Wirebound			Nuts, M/Scs Size	
	Crates, Wooden	2 to 15 days	12 to 16 months	Nuts, Bolt Sizes	
	Nail Kegs	2 months	6 to 12 months		
l week	Half Barrels	2 weeks	12 to 14 months	Machine Screw Nuts	
l week		2 weeks	90 days	Semi-Finish Nuts	90 days
2 to 4 weeks	Cooperage, Tight	12 weeks	3 months	Cap Screws	3 months
CO	NDENSER APRONS		8 to 10 months	Machine Screws	8-10 months
	Chrome	30 days	o to 10 months	Milled Specials	
	ELECTRICAL			Headed Specials	2 to 3 months
	Cables, Wire		Ph	aillips Recessed Head	5 months
to 9 months	Cable, Insulated	to 9 months	6 to 12 months	Sheet Metal Screws	
5 to 7 months	Cables and Wire	to 7 months	10 to 12 months		
to 3 months	Bare Copper Wire	to 6 months	4 to 8 months	Self Tapping Screw	78
20 weeks	Weatherproof Wire	20 weeks	1 to 2 months	Headless Set Screws	
20 weeks		20 weeks	Sq	uare Head Set Screw	
Stock	Wire, Insulated	5-8 weeks	6 to 7 months	Rivets	
3 months	Wiring Devices	to 8 months	3 months	Washers, Flat	4 months
l to 5 months	Conduits, Flexible	to 6 months	Indefinite	Wood Screws	
60 days	Raceway-Fittings	90 days	5 to 6 months	w ood Screws	5 to 7 months
oo days	Generators	2.76		ELT PRODUCTS	
	Motors, Polyphase	to 10 months	2-3 weeks	ELI PRODUCIS	3-4 weeks
3 months	1 - 15 hp	7 months	2-3 WCCRS		O-F WEEKS
4 months	20. to 75 hp	10 months		FITTINGS	
62 weeks	Up to 200 hp		3 to 12 months	Brass, Bronze	
	Fractional hp	1		Copper or Bronze Fittings, Solder Type	
All fractional ex	cept aircraft—2 years	1	Stock to 60 days		
	SWITCH GEAR  Breakers		Stock to 2 month		2 to 4 months
Up to 2.3 K.V.	Air 45 weeks	Oil	Small quantities S	Malleable Iron Stock to 60 days	
2.3 to 6.6 KV	85 weeks	45 weeks	Large quantities	6 months tainless Steel Fittings	
Over 6.6 KV	85 weeks Capacitors	85 weeks	60 to 90 days	Steel Tube Fittings	90 to 120 days
Up to 180 days, in series parallel	depending on rating of	units desired	Stock to 60 days		2 to 4 months
in series paranei	Transformers		Stock to 2 weeks	Pipe Plugs	1 to 3 weeks
1½ to 50 KVA -					
75 to 100 KV 100 to 500 KV	A — 12 to 15 months — 15 to 18 months			<b>FORGINGS</b>	
	(Power) — 15 to 18 months			Brass or Aluminum	3 to 4 weeks
	GASOLINE ENGINE	S		FURNACES	
10 - 10	Air-Cooled		4 to 10 weeks	Heat Treating	8 to 32 weeks
	s Single-cylinder Engines		4 to 10 weeks	Ovens, Industrial	10 to 16 week
6 months	Four-cylinder Engines	10 months	T TO TO WEEKS	Metal Fabrication	
10 months		15 months			2 to 6 weeks
	FASTENERS			GAUGES	
6 months	Bolts, 5%" and under	6 months	Immediate to 24	2" Pressure	60 day
1 month	Bolts, Larger	2 months	Immediate to 30	21/2" Pressure	
10 to 12 month	Bolts, Stove		Immediate to 30	0 days 2" Oxy-Acetylene	60 day
Stock	Nuts, Self-Locking	td. 45-75 days	Immediate to 30		60 day
Stock		s 60 to 120 days	Immediate to 3		30 to 60 day

DELIVERY TIME Standard Products Special Order	Standard Products Special Order
Vacuum Gauges	Elevators, Bucket
Immediate to 30 days  Compound Gauges  60 days	4 months 5 months
Immediate to 30 days 60 days	1 month 4 to 6 months
GEARS	Elevator Belting, Rubber 6 to 9 months 6 to 9 months
2 to 8 weeks 10 months	Elevators, Portable Hand
Differentials 10 months	3 weeks  Elevators, Portable, Electric
	3 months 6 months
GRINDING WHEELS	Elevators, Electric 2 months 4 to 6 month
Vitrified 4 to 6 weeks	Elevators, Portable, Tiering
Resinoid	1 to 4 months 2 to 7 months
— 4 weeks (Finished stock, 2 to 4 days; semi-finished, 4 to 8 days)	Trucks, Hand, 2 wheel 1 to 3 months 4 to 5 month
HOSE, FLEXIBLE, ASSEMBLIES	Lift Trucks, Hand
	Immediate to 30 days  Jack & Skid Systems  30-60 day
Stock to 2 weeks 30 to 90 days	30 days 30 to 60 day
HOSE	MOTORIZED LIFT TRUCKS
Molded, Braided Stock to 6 months (depending on size and construction)	Stationary Platform
Wrapped Hose	30 days 60-90 day
stock to 6 weeks (depending on size and construction)	Low-lift Platform
LEAD	10 to 30 days  Low-lift Pallet
to 3 weeks 4 to 6 weeks	10 to 30 days 30 to 60 day
	Tin Plate  10 to 30 days  30 to 60 day
LIGHTING EQUIPMENT	High-lift Platform
to 6 months 8 to 12 months	10 to 30 days 30 to 60 day
LUMBER	Tilting and non-tilting Fork 30 to 45 days 60 to 90 day
Creosoted	Tractor
Stock 30 to 45 days	10 days 30 to 60 day
2 to 3 months Unobtainable	POWER INDUSTRIAL TRUCKS
White Pine Delayed Delivery — Mills oversold	Lift Trucks, Electric (Platform)
Yellow Pine 2 months	2 to 10 months 8 to 12 month
Cypress	Fork Lift Trucks, 3,000# cap. 1 to 6 months 2 to 8 month
to 2 months Unobtainable	Fork Truck, 2,000# cap.
MAGNESIUM	30 to 60 days 3 to 6 month
4 weeks Sheet — —	Fork Truck, 4,000# cap. 1 to 6 months 2 to 8 month
MATERIAL HANDLING EQUIPMENT	Fork Truck, 6,000# cap.
Industrial Storage Batteries	1 to 8 months 2 to 10 month Fork, 1,000 to 10,000# Gasoline
Lead acid	1 to 2 months 2 to 3 month
Stock to 4 weeks  Casters, Truck	Baggage Trucks 5 to 7 months 7 to 9 mont
I to 2 months 5 to 6 months	Crane Trucks
Casters, Semi-Steel Plate  2 to 6 weeks — —	2 to 8 months 2 to 10 month
Casters, Welded Steel Plate	Dump Truck, Gasoline 1 to 3 months 90 da
3 to 4 months	Tractors, Gasoline Industrial
Assembly Conveyors, Belt 3 weeks 10 weeks	1 to 3 months 2 to 3 mont
Conveyors, Belt	Tractors, Electric Industrial Stock to 45 days 45 days to 5 mont
10 to 12 months Indefinite  Conveyor Belting	Trailers, Factory Warehouse
10 months 10 months	6 to 12 weeks 10 to 24 wee  Platform Trucks (Stake Trucks)
Conveyor Belting, Rubber	1 to 8 months 4 to 10 mont
16 to 32 weeks 6 to 9 months  Conveyors, Coal	Shovels, Gasoline
6 weeks 12 weeks	30 days 90 da
Conveyors, Roller Gravity Light, Medium	PACKINGS
2 weeks 6 weeks	Leather
Conveyors, Sand, Gravel 8 weeks 12 weeks	2 to 3 weeks 4 to 8 wee
D WEEKS IZ Weeks	Oil Seute

2 weeks

Conveyors, Inclined Belt, Stationary, Horizontal
weeks

12 weeks

6 weeks

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18

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ASING

12 weeks

ALSO SEE RUBBER PARTS

Standard Pr	DELIVERY TIME oducts	Special Order
	PIPE	
l to 2 weeks	Brass	
l month	Copper Pipe	rload, 3 to 4 mo. CL, 6 to 8 weeks
3 to 12 month refineries). Tu	s (depending on supp be mill production is	ly of copper from very uncertain.
	PIPING	
	Exhausts and Blow	
3 months	Steel, Welded, Rivete	1 to 3 months ad Indefinite
	PLASTICS	
	old Delivery, 8 to 20 Parts Delivery, 4 to 6 w	
	<b>PUMPS</b>	
8 to 10 weeks	Centrifugal	16 to 20 weeks
No motor — 1		24 weeks
16 weeks	Power Pumps	24 weeks
24 weeks	Pumps, Hydraulic	
4 weeks	Turbine	12 to 14 weeks
RUB	BER PARTS, SYN	THETIC
	Extrusions	
2 weeks	Molded Parts	2 to 3 weeks
3 weeks	thetic Rubber Sheets	3 to 6 weeks
2 weeks	thetic Rubber Sheets	or Rous
	SCALES	
3 to 4 month	Platform, Portable	6 to 12 months
2 to 8 months	Truck, Wagon	6 to 11 months
SCRI	EW MACHINE PRO	ODUCTS
		3 to 4 weeks
	Brass, Aluminum, St	eel 2 to 3 weeks
	<b>SPRINGS</b>	
	tension, Compression,	
2 to 4 weeks	Spring Stampings	1 to 2 weeks
		90 to 120 days
6 to 8 weeks	Springs and Small Wi	re Forms 1 to 2 weeks

**STAMPINGS** 

STEEL, CARBON

SPEED REDUCERS

**SPROCKETS** 

Cut Tooth Steel

7 months

10 to 14 weeks

6 to 8 weeks

Standard		ELIVERY TIME	Special Order
8 to 15 mg	-	t Tooth Cast Iron	n
		TAPES	
		Electric	
Stock to 2	weeks	Cloth Back	4 to 6 weeks
Stock to 2			4 to 6 weeks
12 months	TEXT	TILE EQUIPMI	ENT 18 months
12 months	Textile	Finishing Equip	oment 16 months
		TIN	
10 days			2 to 3 weeks
		TOOLS	
		Twist Drills	
1 to 2 wee	ks	Reamers	3 to 4 weeks
1 to 3 wee	ks	Reumers	4 to 5 weeks
		TUBING	
4		Aluminum	
4 weeks		Alloy	
2 to 3 wee		eamless and Weld	ded Tubes
2 months		mless, Hot Finish	4 months
4 to 5 wee	ks		
6 to 8 wee	-	mless, Cold Draw	
3 to 4 mo	nths	Boiler Tubes	
		VALVES	
		Brass	
Stock to 30	0 days	Bronze	
	Bronze,	Solder Type or T	Threaded
Stock to 60		Valves, Iron	
Stock to 6		Valves, Steel	4 to 12 months
		Valves, General	(0.1
Stock to 30		Stainless Steel	60 days 90 to 120 days
		WIDE	
"Next quar	rter's pro	WIRE	ustomers on a pro-
rata Dasis.	wire sit	uation tight as e	ver.
6 to 8 wee	ks	Wire Forms	5 to 6 weeks
		Iron	3 to 4 months
20 weeks		Platinum	
10 weeks			
		WIRE CLOTH	
10 .		Insect Screen er, Bronze, Alum	
10 months	Stane	lard Hardware C	
8 to 10 m	Coa	rse Industrial Cl	
1 week to		ne Industrial Cla	2 weeks to 3 mos.

Fine Industrial Cloth
1 to 7 months — Some immediate

DELIVERY TIME

6 to 8 weeks

5 months

8 weeks

4 to 6 weeks

6 to 12 months

1 to 7 months

## QUANTITY DISCOUNTS ATTACKED

Federal Trade Commission may invoke provision of the Robinson-Patman Act to limit discounts

THE time-honored business practice of offering quantity discounts to large-volume buyers is being probed by the Federal Trade Commission at the instance of the White House, as part of the government's present drive to bring about a lower price level. Exact direction of the inquiry is not yet disclosed, but it is suggested that there may be a move toward strict regulation and limitation of the discount system, following the general pattern of allowable differentials in freight rates, in the event that FTC economists find such limitations to

be in the public interest. It is not immediately apparent ow a limitation on discounts would decrease prices, since the discounts themselves are a means of reducing prices. It might be contended that the existence of a discount system in itself indicates that the base prices, from which quantity discounts are deducted, are unreasonably high. In that case, the government's logical procedure would be to attack the price situation through the current Justice Department investigations looking for price-fixing conspiracies and for possible inflationary tendencies in the so-called fair trade price laws within the provisions of the Miller-Tydings Act. In either case, the process of correction is likely to be a slow one, involving court action and perhaps requiring amendment

of the basic law.

The approach to the problem through FTC is quite different.

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Quantity discounts are found at all levels of trade, at retail as well as in industrial transactions. theory, they reflect the economies of large-quantity production, and, just as significantly, economies in the cost of doing business on a per-order basis. The problem of small orders is one that has long plagued buyers and sellers alike, and the quantity discount is one way - and rather an effective way - of mitigating that condition. Discounts are also recognized in marketing practice as an incentive for increasing the volume of business, not only on a per-order basis but also in total. The retroactive quantity discount, based on total volume of business placed in the course of a year, is a case in point. All of these represent legitimate business objectives, and can be logically defended. One of the most serious points at issue in practical business dealings arises when the quantity discount comes into conflict with the functional discount, by which a small wholesaler may enjoy more favorable prices than a much larger consumer, by virtue of his position in the distribution scheme. This is defended as a marketing policy as necessary to maintaining an orderly system of distribution. The problem is not a simple one.

Those who are initiating the present move do not take exception to the general principles outlined above, upon which the quantity discount is based. They do question whether the scale of discounts offered in many cases accurately and proportionately reflect the savings to the vendor that would justify such differentials. Beyond the point where a quantity discount can be rationalized in reference to actual costs, they see a danger of discriminatory practice in favor of the large volume buyer, with the result that the distribution of a product may be unduly concentrated among a limited number of such quantity buyers, thus setting the stage for monopoly pricing.

An analogy is drawn with the system adopted by the Interstate Commerce Commission in setting permissible differentials in freight rates. The carrier is permitted to establish a differential between full carload and less-than-carload shipments, but that is the only differential that is permitted, and neither the carrier nor the buyer can derive freight advantages based on any other quantity distinction, even though the transportation may involve many carloads. That regulation is well established and is accepted in business dealings.

The analogy is not a perfect one, for in the consideration of manufacturing and distribution costs more numerous and more variable factors are encountered to complicate the problem. To apply similar reasoning in limiting quantity discounts, FTC would presumably set quantity limits for each commodity beyond which no further discount would be permitted to apply. This would vary with different commod-

ities, reflecting the demonstrable economies of large-quantity manufacture and distribution, but also introducing an additional factor by setting the quantity limits at a point that would insure effective competition in the distribution and availability of the commodity.

Authority for the regulation of discounts is found in a specific provision of the Robinson-Patman Act, which states:

"That the Federal Trade Commission may, after due investigation and hearing to all interested parties, fix and establish quantity limits, and revise the same as it finds necessary as to particular commodities or classes of commodities, where it finds that available purchases in greater quantities are so few as to render differentials on account thereof unjustly discriminatory or promotive of monopoly in any line of commerce; and the foregoing shall not then be so construed to permit differentials based on differences in quantity greater than those so fixed and established."

According to FTC officials, the authority granted by this particular clause has never yet been exercised. But it is none the less valid, and there are many who believe that the time has come when it should be invoked, provided that the evidence shows that the quantity discount practice is actually being used to promote such monopolistic situations or does in fact result in a restraint of trade.

Should such action be taken, it will have a fundamental effect on industrial purchasing policies and practice. Some - perhaps a substantial part - of the advantages of quantity buying and the concentration of purchases with a single source may be nullified. Compensating in part for these price disadvantages, will be the increased possibility for diversification of sources of supply without sacrifice of quantity discounts beyond the basic limit that may be set in the regulation, and the modification of present standards for most economical purchase and inventory quantities. The effect in many cases would be to place the responsibility for carrying large inventories on the producer of a commodity, rather than on the purchaser or user.

## WHEN SELLER SUES PURCHASER

The only way to be on safe ground in respect to a contract of sale is to be sure that the obligations of both parties are clearly set forth and that your obligations are fulfilled

• By Leo T. Parker

R ECENTLY, a reader wrote as follows: "I read with considerable interest your recent article 'When Purchaser Sues Seller'. I found a case in this article which will assist my lawyer to win a suit filed against me by a seller. I think an article reviewing suits filed by sellers against purchasers will greatly assist all readers to defend suit."

In view of this letter we shall, in this article review outstanding late and leading higher court law suits involving various phases of controversies in which sellers sued purchasers.

#### Reason for Suits

First, it is important to briefly list legal reasons sellers may sue purchasers. Here are the chief reasons:

 When purchaser refuses to accept delivery of purchased merchandise;

(2) When purchaser refuses to pay for accepted merchandise;

(3) When purchaser claims that he is entitled to a reduction of the original contract price;

(4) When purchaser accepts delivery of merchandise and then returns it to the seller;

(5) When purchaser refuses to fulfill obligations which the seller's salesman contends he assumed;

6) When a purchaser demands a seller to fulfill the terms of a guarantee the latter repudiates;

(7) When disagreement arises between a contractor, or distribu-

tor, and a manufacturer over responsibility of a guarantee; and

(8) When a purchaser erroneously believes that a valid sale contract exists.

#### Not Conditional Contract

Considerable discussion has arisen from time to time over the legal question: By what legal rules may a purchaser determine when an agreement is a sale contract?

A review of numerous higher court decisions discloses that courts have adopted law, as follows: A sale contract is any contract for the sale of goods under which possession is delivered to the buyer and the property in the goods is to vest in the buyer at a subsequent time upon the payment of part or all of the price, or upon the performance of any condition or the happening of any contingency.

Under no circumstances is an agreement a contract of sale if the purchaser did not positively agree to pay a stipulated sum for the subject of the sale.

For illustration, in Oberan v. Western Machinery Co., 174 Pac. (2d) 745, reported January 1947, it was shown that one Oberan entered into a written contract with the Western Machine Company for the rental of a compressor. This agreement was designated "Rental Agreement"; the parties are described as "Lessor" and "Lessee"; with rental to be paid at the rate of \$95 per month.

The agreement also contained a

clause giving to Oberan an option to purchase the compressor. option provision is as follows: "Lessee (Oberan) is hereby granted an option (at any time within 510 days hereafter) to purchase the above described personal property for the sum of \$1,224.50, plus sales tax, and to have applied on account of said purchase price 75% of all subsequent rentals payable to Lessor pursuant to this agreement, up to the time such option is exercised by written notice to that effect, which shall be given by Lessee to Lessor; it being understood, however, that Lessee forfeits all of his rights under this option if any of the rental payments are not made as herein provided.'

Oberan fell behind in the rental, and many letters, telegrams, and telephone calls were directed to him, calling his attention to the arrears and requesting payment. Payment not being made, the Western Machinery Company repossessed the machine and sued Oberan for the balance due on "rentals". Oberan defended the suit on the grounds that the agreement was a conditional contract which entitled him to legal ownership and possession of the compressor. The higher court disagreed with this contention and held that, since Oberan failed to exercise the option, the contract was a lease contract. This court said:

"In the rental contract there was no obligation on the part of the lessee to pay beyond the rental peri-

od for which he might choose to keep the machine. If he elected to return it at the end of one month it was his privilege to do so. His only obligation was to pay for that month's rent. The lessor could at no time insist that the lessee pay the entire price of the machine because there was no promise by the lessee to do so. Unless an obligation was created on the part of the so-called purchaser to pay, there could not be a conditional sales contract . . . The lessee had an option to buy upon certain terms and conditions. There is no evidence that the appellant (Oberan) here ever gave written notice of the election to exercise the option, which is one of the requirements for its exercise.

Also, see Automatic Voting Machine Corporation v. Maricopa County, 70 P. (2d) 447, 116 A.L.R. 320. In that case a purchaser entered into an agreement in writing with a manufacturer for the rental of 45 voting machines. One of the provisions of the agreement was that the purchaser might, at its option, have the right to purchase the voting machines at a stipulated price, and that all payments which had been paid for rent under the contract should be applied on the purchase price.

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This court held that the agreement was not a conditional sales contract in that there was no absolute liability on the part of the lessee or buyer to pay the purchase price.

#### Manufacturer Breaches Contract

Under no circumstances may a seller repossess equipment purchased on installment payment plan, if he breaches or violates any clause in the contract.



For example, in Brandtjen & Kluge, Inc., v. Pope, 192 S. W. (2d) 496, reported February, 1946, the testimony showed facts as follows: A manufacturer in January sold to the Golden Rule Printers certain printing presses, press feeders and other equipment. The sale was made under a conditional

sales contract. This contract provided that in event the purchaser defaulted on any installment, when due, this default would entitle the manufacturer to take possession of the presses and other equipment and keep all payments made by the purchaser. The latter paid down \$214, and gave monthly notes for the balance due. The contract contained a clause to the effect that before the manufacturer would take possession of the presses and equipment he would notify the purchaser.

A disagreement arose when the purchaser notified the manufacturer that by reason of defects a part of the machinery would not work automatically. The manufacturer demanded that the purchaser make the agreed monthly payments but the latter refused to do so. Then the manufacturer wrote the purchaser that he would sue under the contract immediately because of the purchaser's failure to pay the notes. However, the manufacturer did not state in this letter that he intended to repossess the equipment.

Soon afterward the manufacturer filed suit and took possession of the presses and equipment. Then the printer sued the manufacturer for \$225 as damages for loss of use of the equipment. The purchaser contended that the manufacturer had no legal right to take possession of the equipment because he had not complied with the above clause in the contract which required him to notify the purchaser of these intentions.

The manufacturer contended that his letter was proper and legal notification, but the higher court refused to agree with the manufacturer and held the printer entitled to recover \$225 damages. Also, the court ordered the manufacturer to return the presses and equipment to the purchaser, and said:

"The principle is that it is a plain matter of contract, and the parties are entitled to have the contract enforced according to its terms . . . We are of the opinion that the letters from the complainant (manufacturer) did not constitute notice of an intention to accelerate."

#### Validity of Conditional Contract

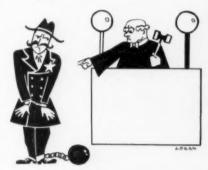
It is well settled law that a legally recorded conditional contract of sale is valid and effective to the buyer and that the seller, assigns and all parties, including public officials, are personally responsible for violating the terms of the recorded instrument.

For example, in Commercial v. Dusckett, 49 Atl. (2d) 106, reported January, 1947, the testimony showed that a seller sold equipment to a purchaser named Lambert, who signed a written memorandum which acknowledged the purchase and delivery of the equipment. It recited that the sum of \$359.28 was to be paid by the purchaser in eighteen monthly installments of \$19.96 each. This written memorandum provided that title to the equipment shall continue in the seller until the full purchase price is paid in cash. On the same day the purchaser executed and delivered to the seller a "Conditional Sale Agreement" which contained essentially the same provisions. The agreement was recorded in the Recorder's office.

Several weeks later a creditor of Lambert attached the equipment and sold it to satisfy Lambert's

debt.

In the meantime the seller had assigned both the memorandum, conditional contract and notes to Commercial Credit Corporation. When the latter learned that the Sheriff had attached and sold equipment which had been sold under a conditional contract of sale, the credit corporation sued the Sheriff to recover from him the value of the equipment.



The counsel for the Sheriff argued that the latter could not be personally liable because his official duty was to execute the attachment suit. However, the higher court held the Sheriff personally liable.

#### Two Innocent Persons

All courts have adopted this rule: Where one of two innocent persons must suffer from the wrongful act of another, the loss must fall upon the one making the loss possible.

See Walsh v. Hunt, 52 P. 115, where one Hughes was authorized by Willis to negotiate a loan for \$500 with which to pay off an existing obligation. Thereafter Hughes presented for Willis' signature a note and mortgage which

he executed in pencil. Later Hughes erased the pencil words and figures and wrote in lieu thereof with pen and ink twelve hundred dollars.

This higher court held that the lender could recover \$1,200 from Willis upon the theory that the latter was guilty of negligence in executing the documents written in pencil, thus enabling Hughes to perpetrate his fraud.

Hence under no circumstances should any one sign a contract or other instrument whose body is

written in pencil.

#### Contract Altered

Considerable discussion has arisen from time to time over the legal question: Are contracting parties obligated by new conditions written into a contract after it is signed?



In Taylor Const. Company v. Clynch, 196 S. W. (2d) 700, reported December, 1946, it was shown that a contract was signed. Later the seller made some changes on the original copy of the contract and returned it to the purchaser with an explanation in a letter that some clauses in the contract were not in accordance with the verbal agreement made before the contract was reduced to writing.

The seller of the equipment sued the purchaser and the question presented to the court was: Are the contracting parties obligated by the written contract which was altered?

In holding in the affirmative the higher court said the purchaser became obligated by the changes because he failed to complain and used the equipment afterward.

#### Forged Signature Void

Under no circumstances will a forged signature convey legal own-

ership to merchandise.

For example, in Nathe v. Fred W. Gray Company, 171 Pac. (2d) 67, reported September, 1946, it was shown that one Nathe was the owner of valuable merchandise. His friend forged a bill of sale and sold the merchandise. The higher court held that Nathe could recover possession of the merchandise.

Very frequently distributor buyers have controversies with manufacturers over responsibility of guarantees given the ultimate consumer or purchaser.

#### Liability on Guarantee

According to a late higher court decision a distributor and *not* the manufacturer of equipment is obligated to ascertain unusual local conditions and properly install the purchased equipment.

For illustration, in Fairbanks, Morse & Company v. A B C, 24 So. (2d) 393, the higher court refused to hold a manufacturer liable on its guarantee where the testimony showed that the application contractor failed to properly install the

equipment.

The testimony proved that the ABC Company made a contract with a property owner to install air conditioning. The ABC Company had representatives of Fairbanks, Morse & Company, a manufacturer, visit the property and make certain drawings setting forth the proposed air conditioning system and the type of unit which would be necessary to accomplish the desired result. Upon the recommendation of representatives of Fairbanks, Morse & Company, the ABC Company signed a contract for the purchase of one "SCH-60W self-contained air-conditioning unit, compressor motor" for a price of \$917.50. The contract between the ABC Company and the property owner specified \$1,485.



Upon completion of the job, the property owner refused to pay the contract price on the ground that the air conditioning unit did not produce the results guaranteed by the ABC Company. The latter failed to pay the manufacturer. Then the latter filed suit against the ABC Company.

In the meantime it was definitely established that the unit operated perfectly and that it was sufficient in size to cool the property to the extent contracted for by the

A B C Company, and that the reason why the unit did not do so was due to an inadequate water supply during the summer months when the temperature of the city water was very high.

It is interesting to observe that the higher court held the ABC Company solely liable for full payment to Fairbanks Morse although the property owner was not required to pay the ABC Company.

#### When Seller Breaches Contract

The various courts consistently hold that when a seller refuses to perform in accord with the provisions of a guarantee the purchaser may acquiesce in the repudiation. Thus the contract is terminated, but the seller can be held liable in damages. On the other hand, if the purchaser so chooses, he may elect to treat the agreement in full force and effect, and may sue to have his legal rights adjudicated. See Roehm O. Horst U. S. 1 at page 11, 20 S Ct. 780,, 44 L (2d) 953.

Another important point of law is that if the purchaser who is not in default induces the seller to continue performance of the contract, the former is not permitted later to alter his position, or to claim that the contract is discharged after the seller in default has been induced to

alter his position.

Hence, if a seller breaches a contract and subsequently acts in reliance upon representations of the purchaser, the latter cannot alter his position. Stated otherwise, if the seller breaks the contract and the purchaser insists upon continuing performance, the purchaser cannot elect to treat such breach as a discharge.

See Kentucky Gas, 129 Fed. (2d) 17, where the testimony disclosed that two companies entered into a written contract by the terms of which the seller agreed to sell and the purchaser agreed to purchase stipulated merchandise. Several months later the seller advised the purchaser that he had elected to terminate the contract because of alleged misrepresentations, and also because the contract price was too low. The purchaser filed suit and asked the court to grant an injunction to prevent the seller from refusing to complete the contract, insisting that the agree-ment was in full force and effect. The suit was withdrawn and from that time until more than two years later the seller supplied merchandise, billing the purchaser at a price higher than specified in the coni. it iie ct

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Bumpers and similar parts that require good cold-forming quality in steel are stronger and more economical to produce when made of N-A-X HIGH-TENSILE.

N-A-X HIGH-TENSILE's resistance to deformation (denting) is 60% greater than the denting-resistant quality in carbon steel. Its inherently fine grain and higher hardness provide a better surface texture for plating.

If you have parts requiring a combination of high strength, good formability and better surface texture, it will pay you to investigate N-A-X HIGH-TENSILE steel.



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tract. Later the seller filed suit to recover from the purchaser damages based upon the latter's failure to accept the merchandise at the higher price. The purchaser contended that the seller was not entitled to a judgment because such seller was not ready, willing and able to deliver merchandise upon the terms specified in the original contract.

However, since the purchaser had not at any time treated or considered the original contract other than in full force, the higher court held the purchaser fully liable in damages.

Therefore, when there is an actual breach of a contract either party will, if he insists on performance, keep alive his own obligation to continue with performance of the original contract.

#### Former Price Irrelevant

Modern higher courts consistently hold that when a seller breaches a contract to deliver merchandise he is liable to the purchaser for full damages. Generally speaking, these damages are based on the difference between the price specified in the contract and the selling price of the merchandise on the day the contract stipulated that delivery must be made. However, according to a recent higher court the "market" price of merchandise is not dependent nor based on the price paid for basic materials.



For illustration, in Willumsen v. Soule, 35 Atl. (2d) 660, a purchaser sued a seller for breach of a contract to deliver to Chicago a car load of American block sugar, grades 2 and 3, at a price of 21 cents per pound f.o.b. St. Albans. The delivery was to be made on July 14. The only question for the jury to determine was the market price on July 14, at Chicago.

The higher court refused to hold that the market price of the sugar could be determined from testimony relating to the manufacturing costs.

The market price of the sugar itself on the date the seller promised to deliver the sugar was held to be proper.

On the other hand, a seller never is liable to a purchaser for more than actual damages and losses sustained by the latter as a result of a breach.

For example, in Mangin v. Jorgens, 24 So. (2d) 384, reported March, 1946, a seller sued a purchaser to recover \$104.78, representing the balance allegedly due under a contract to furnish and install four Reems floor furnaces for the sum of \$334.78. The purchaser denied liability on the ground that the furnaces were defective. The purchaser also demanded that the seller repay \$219.02, payments he made on the contract price.

In other words, this purchaser demanded that the seller return all money received and cancel the amount still due. Thus, the purchaser would have the "defective" furnaces free and without cost.

The higher court held that the purchaser must pay the "reasonable" value of the furnaces, although the seller breached the contract.

#### When Contract May Be Rescinded

The principle of the law is firmly established that all parties to a valid contract are bound to fulfill the precise terms of the agreement. The instant one party fails in this respect he performs a legal breach, and the other party has choice of doing either of these three things: (1) he may refuse to continue to perform his obligations of the contract and sue the other party for damages and profits equal to his financial loss resulting from the breach; (2) or, he may file suit and compel the other party to fulfill the exact terms of the agreement; (3) or, the parties may enter into negotiations and make a supplementary contract.

Another important rule of law is: All contracts are valid and enforceable (1) if either of the contracting parties submitted an offer which the other party unconditionally accepted; (2) if both parties had definite obligations fixed; (3) if the object of the contract was legal; (4) if both parties were sane and of legal age; (5) if the duration or time for carrying out the contract was clearly specified and understood; (6) if the quantity and quality of the subject of the contract were clearly stated; (7) if both parties were mutually obli-

gated to perform one or more acts of benefit or detriment to the other; (8) if the contract did not violate a state or city law; (9) if neither party practised fraud.

If one party submits a proposition or offer, the contract is not completed until the other party unconditionally accepts the offer. Thus, the party receiving the offer cannot state "I accept your offer, if you do so and so", as only an unconditional acceptance can result in a valid contract.

The contract must specify definitely the obligations of both parties. *Nothing* should be indefinite.

The object of the contract must be legal and not in violation of any law. Of course, a contract is void when made by an insane person, but the contract is only voidable if made by a minor. In other words, a voidable contract is one in which only one of the parties has the sole privilege to decide whether the contract shall be enforceable. The common classifications of voidable contracts are those which have been induced by one party by fraud, undue influence, or misrepresentation. Moreover, if a minor makes a contract he may compel the other party to fulfill it, or he may cancel it, as he desires.

Every contract must distinctly specify when it terminates. If, for instance, it is a sale contract, the agreement is terminated when the purchaser pays the final amount due after all goods have been delivered to him.

If the quality or quantity of the merchandise is not specified so clearly that anyone familiar with the goods may determine the exact quality and quantity, the contract is

The contract must have valid consideration, and both parties must agree to perform some act or do something for the other.

The contract is void if it violates any law. For illustration, a contract relating to sale of real property is void unless, as required by law, it is in writing.

A contract induced by fraud is void. When a seller intentionally misrepresents material facts, or produces a false impression, in order to mislead a purchaser that is fraud. Misrepresentation may be accomplished by deeds, or acts, or by artifices to mislead by positive assertions, or by failure to impart the truth. Also, any coercion, undue influence, duress, threats, or the like, by which a party induces another to sign a contract results in a void contract.

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slide your product in, tape, staple, or tie, and off it goes—protection plus and at what a saving!

Try Corroflex TUBE-TAINER in your own Shipping Department and see for yourself how this revolutionary new idea in packaging can save time, material, and shipping costs. Write for the free trial kit and

photographic illustrations of short cuts in packing with Corroflex TUBE-TAINER.

\*Patent applied for in U.S. and foreign countries • T. M. Reg. U.S. Pat. Off.



PAPER PRODUCTS CORPORATION

Newton Upper Falls 64, Mass.

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NOW! Please send me the TUBE-TAINER
Free Trial Kit containing an assortment of 4 stock sizes and

photographic bulletins on short cuts in packing.

Sherman Paper Products Corporation

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Address

# Purchasing Agents and their Assistants are invited to check the pre-paid "Ask Purch" postcards on Pages 19 and 20 for late catalogs and bulletins on New Products, Materials, Finishes, Equipment, etc.

#### 3000 LB. LIFT TRUCK



MODEL F Mobilift truck has a rated capacity of 3000 lbs. on a 1g in. load center. It weighs approximately 4450 lbs. and is equipped with a 20 hp, 3-cylinder, air-cooled engine. It requires

no gear shifting and has an overall turning radius of only 61". It is equipped with roller chain lift, available in lifting heights of 68" or 108" (underside of load). General Equipment Company, 835 S.E. Main St., Portland 17, Ore.

OPEN-END V-BELTING BY FOOT OR YARD OPEN-end V-belting, in reels of 450 to 550 foot lengths, puts buying of this belting on foot or yard basis accord-

ing to wants. Using special fasteners to splice the open ends, making an endless power-transmission belt, V-Belt can be formed to proper size for emergency use and special adaption. Open-end V-belting is available in standard top widths of 21/32, 7/8 and 11/4". B. F. Goodrich Co., Akron, Ohio.

#### FRICTION CLUTCH SCREW DRIVERS



M O D E L S 7037 and 7039 air screw drivers, for No. 4 to No. 8 wood or machine screws, incorporate a new friction clutch attachment, using ¼" hex shank bits or ¼" hex adapter with square drive

for nut setting. Clutch attachment is designed to permit a greater travel range of the adjusting nut which controls the tension of the clutch spring. Model 7037 (illustrated) has a lever throttle. Model 7039 is equipped with pistol grip. Overall length of the tool is 8½", weight 1¾ lbs. Speed is adjustable to 1800 rpm. The Aro Equipment Corp., Bryan, O.

#### IMPROVED MILD STEEL ELECTRODE

AIRCO No. 312 all-position electrode is now available for use on a-c and d-c reverse polarity current,

and preheating of the electrode is unnecessary to obtain porosity-free weld deposits. These deposits can be obtained by using either the stringer bead or the full weave technique. The electrode has an extreme low hydrogen content, it is claimed. Air Reduction Sales Co., 60 E. 42nd St., New New York 17, N. Y.

#### ALUMINUM GRAVITY CONVEYOR



LIGHT-WEIGHT aluminum gravity wheel-type conveyor, for Rapid-Wheel conveyor installations and general use, is manufactured in 5, 6, 8 and 10 foot lengths in one width of 12". An 8-foot section weighs 31½ lbs. The conveyor is corrosion-proof, and all nuts and bolts used are plated for corrosion resistance. Standard rating of an 8-ft. section, with 10 ball-bearing wheels per foot, is 600 lbs., or 75 lbs. per foot. A three inch decline per 8-foot section will move materials smoothly, it is claimed. The Rapids-Standard Co., Inc., Dept. AW-261, 342 Peoples National Bank Building, Grand Rapids 2, Mich.

1/4 INCH PORTABLE ELECTRIC DRILL LIGHTWEIGHT Hi-Power portable electric drill features comfortable pistol grip handle with trigger switch

with trigger switch Control. Capacity, ¼" drill in mild steel or hard wood; overall length 11"; body diameter 2¼"; net weight 3 lbs. 8 oz., 110 volt, universal a-c, d-c motor (other voltages available); no-load speed 1700 rpm; full load speed 900 rpm. Portable Electric Tools, 255 West 79th St., Chicago, Ill.

#### PORTABLE INCINERATOR

ILLUSTRATION shows one of a line of portable incinerators for the disposal of all types of industrial and institutional refuse. It is made in 3 sizes, with grate widths of 24", 36", and 48",



with varying destructive capacities per hour. If gas burners are added, garbage destructive capacities are increased about 50%. Steel stacks can be furnished as optional equipment, and gas burners are available. Bulletin furnishes full information. Plibrico Jointless Firebrick Co., 1800 Kingsbury St., Chicago 14, Ill.

HOLDS POWER FOR MONTHS INSECTICIDE known as Perman, a blend of DDT quick knockout toxicant leaves a film which holds

its power for months, according to the maker, when used as residual spray, and kills insects on contact. It can also be used as space spray, and is said to be effective for use in cracks and crevices where insects hide. The C. B. Dolge Co., Westport, Conn.

#### 4-POLE SHADED POLE MOTOR

THE micromotor, 4-pole shaded pole motor, designated Type "T", is built in sizes from 1/25th to 1/100th hp. It has 3-piece die-cast frame with a steel outer shell enclosing the air-stream cooling system. In



the flush weld rotor, every slot is copper filled flush with surface, precision skewed and welded, and the surface is machined and rust inhibited; assembly is accurately balanced. Motor is cradled in live rubber cushions. Redmond Co., Inc., Owosso. Mich.

(Please turn to page 154)

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# No Conduit Box Needed with RELIANCE Series & MOTORS

Simply remove external conduit box. Then remove knockout between the motor feet. When leads and connections are inserted, attach cover plate which comes with motor. For complete details, write for Bulletins C118—3039.

CHECK THESE

ADDITIONAL FEATURES

OF RELIANCE Series C MOTORS

- 1. Protecting enclosures keep out dirt, chips, oil, excess moisture.
- Fabricated steel stators provide ample ruggedness for heavy duty service in even the smallest motor.
- 3. Thirteen-step winding treatment for maximum stator protection.
- 4. Pressure-cast aluminum rotors provide trouble-free windings.
- Heavy shafts liberally designed for added strength.
- 6. Improved bearing lubrication affords real protection to bearings.
- Flange and face type brackets offer alternative methods of machine application.



Alternate arrangement can be made by removing knockout in cover plate and inserting conduit connector.

Retain Conduit Box and You Still
Have a Choice of Connections



Retaining conduit box, you still have optional ways of connecting a Reliance Series C Motor. Box may be rotated to any of four different positions. Or move box to opposite standard simply

by removing rotor and turning stator 180 degrees.

#### RELIANCE ELECTRIC & ENGINEERING CO.

1056 Ivanhoe Road



Cleveland 10, Ohio

Appleton, Wis. • Birmingham • Boston • Buffalo • Chicago • Cincinnati • Dallas Denver • Detroit • Gary • Grand Rapids • Greenville, S. C. • Houston • Kansas City Knoxville • Los Angeles • Milwaukee • Minneapolis • New Orleans • New York Philadelphia • Pittsburgh • Portland, Ore. • Roanoke, Va. • Rockford • St. Louis San Francisco • Seattle • Syracuse • Tampa • Tulsa • Washington, D. C. Sao Paulo, Brazil

RELIANCE OC MOTORS

"Motor-Drive is More Than Power"

#### ANNULAR MARKER



STAMPING device for annular marking uses a combination of a solid stamp and interchangeable type. Gears, bushings, and sleeves can be stamped around radii with "Standard" infor-

mation and additional "variable" data such as the date, batch number, etc. The marker has a press mounting adaptor permitting it to be used on practically all types of presses (including manual) for machine stamping. The marker consists of a mounting adaptor; a bushing stamp carrying standard information and mortised for "variable" data, held together by set screws. New Method Steel Stamps, Inc., 147 Jos. Campau, Detroit 7, Mich.

#### METALLIC SHEATHED GRINDING WHEEL

METALLIC sheathing on grindwheel of vitrified or ceranic bond tends to dissipate heat generated at

the arc of contact over the entire area of the wheel. The metallic film does not affect the truing or dressing of the wheel, and its waterproofing qualities keep the coolant at the arc of contact. The wheel cuts faster and cooler, with greater tool life between grinds, it is claimed. Surface grinding, internal grinding and tool-and-cutter grinding can be handled with the wheel, called the "Silver Streak". Chicago Wheel & Mfg. Co., 1101 West Monroe St., Dept. PG, Chicago 7, Ill.

#### PREFABRICATED SHELVES



HINES-SHELVES are made in one basic size, 3 ft. wide, 3 ft. high, and 111/2 deep. The regular units can be mounted one over another and fastened together with steel dowel pins provided in each carton, to make shelves 6, 9 or 12 feet high. With extension units, free standing shelves of any length in multiples of 3 feet can be built. One regular unit will support 600 lbs. evenly distributed on the three shelves. Frames are made of Ponderosa pine, and shelves and ends of Masonite Presdwood. No nailing or cutting is necessary for assembly, and screw driver is only tool needed. Edward Hines Lumber Co., 2431 S. Wolcott, Chicago, Ill.

#### COOLANT FOR HIGH SPEED PRODUCTION ON TOUGH ALLOYS

LUSOL, a liquid concentrate used with 10-75 parts of water, is designed to meet the requirements of high

speed production on tough alloys. Used in that proportion it makes a true solution, not an emulsion, according to the manufacturer. It is claimed that the concentrate does not evaporate or become rancid. It has low interfacial tension and is said to get between tool and chip rapidly and thereby prevent formation of heat. Increased production rate, longer tool life, closer tolerances, cooler and cleaner work are said to result from its use. Literature available. Anderson Oil Co., Inc., 551 Brownstone Ave., Portland, Conn.

#### PNEUMATIC TIRED FORK TRUCK



"YARDLIFT 20" is a pneumatic tired gas powered fork truck of 2000 lb. capacity for use where maximum traction is essential. Standard models have tiering height of 72" and 118"; optional uprights provide for heights from 60" to 144". By use of the pivoted steering axle design the frame is suspended at the center of the steering axle, permitting the velvicle to conform to uneven surfaces. assuring effective traction and preventing frame distortion and spring breakage, it is claimed. The seat has an adjustable back rest. Front driving tires are 6.00 x 9, 10 ply; rear steering tires are 4.00 x 8, 6 plv. Clark Tructractor, Division of Clark Equipment Co., Battle Creek, Mich.

#### VALVES FOR CORROSIVE SERVICE

LINE of corrosion resistant safety and relief valves employs Hastelloy-C for the inserted nozzle and the

valve disc, and in certain models for the complete valve body. The alloy is said to be proof against the corrosive action of any of the acids or caustics normally handled on a commercial scale. Also, all working parts of the valve are isolated behind a vapor proof "Farriseal" curtain. Material of seal may be of either rubber, neoprene, or any flexible metal designed to withstand the action of specific acids or caustics. They are available with flange connections in sizes from ½" to 2"; with screwed connections in sizes from ½" to 1". Farris Engineering Corp., 529 Commercial Avenue, Palisades Park, N. J.

#### MULTIPRESS MIDGET



MULTIPRESS
Midget is designed
for pressing requirements between
200 and 2000 lbs.
ram effort. Maker
states it is ideally
suited for multiple
or "gang" installations and for successive operation

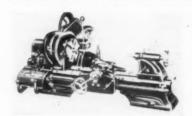
requirements. One centralized power source will operate up to 12 units. Each unit has individual pressure adjustments. The midget may be operated in any position, and is adaptable to other hydraulic machinery as an accessory unit for pressing, clamping, feeding and countless other production tasks. Thee different base plate designs. Printed matter available. The Denison Engineering Co., Columbus 16, Ohio.

#### STRIP EXPANDER FOR LEATHER CUP PACKINGS

EXPANDER for leather cup packings is produced in strip form of heattreated beryllium copper material

that is said to be highly impervious to corrosion from brine solution, gasoline, alcohol, sea water and many other solutions. For use in air hydraulic, fluid sealing, etc., the expander is designed to maintain constant contact between packing seal lip and cylinder wall on all pneumatic and hydraulic equipment. It is designed to fit any cup diameter 2" or over. Smaller sizes available. Further details in Bulletin ESC500. HPL Manufacturing Co., 2013 East 65th St., Cleveland 3, O.

#### 10-INCH QUICK CHANGE LATHE



ATLAS 10" Quick-Change lathe has instant fingertip selection of 24 threads and feeds. Tumbler gear lever reverses gears or disengages them from lead screw. The quick-change mechanism does not limit the odd thread and feed range capacity of the Atlas lathe. Hundreds of additional threads and feeds are obtainable with change gears. Specifications: swing over bed 10½", over carriage 65%"; 16 spindle speeds between 28 and 2072 rpm; thread cutting range, right and left, 4 to 240 per inch; two bed lengths available, capacity 24" and 36" between centers. Operates from 1/3 or ½ hp 1725 rpm motor. Catalog available. Atlas Press Co., 2340 N. Pitcher St., Kalamazoo 13D, Mich.

(Please turn to page 156)

FOR SAFETY'S SAKE . . . USE CONDUIT (Full Weight Rigid Steel)

#### Wherever it's "SAFETY FIRST"

DEPEND on Youngstown's Buckeye Conduit for safety in electrical wiring. It is a standard-threaded, full-weight, rigid steel conduit of uniform, high quality. It provides the surest known protection against moisture, vapor, dust, crushing, vibration, and tampering by unauthorized persons.

Remember that this type of conduit is the only wiring system approved for hazardous locations by the National Electrical Code. So for Safety First, look for the underwriter's label bearing the name Youngstown on every length of conduit.

"Buckeye" is sold by leading electrical distributors in every industrial market.

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## YOUNGSTOWN

THE YOUNGSTOWN SHEET AND TUBE COMPANY

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Export Offices - 500 Fifth Avenue, New York City

Manufacturers of CARBON - ALLOY AND YOLOY STEELS

Ask your distributor for:
Youngstown Buckeye Conduit...Pipe and Tubular
Products...Sheets...Plates...Electrolytic Tin Plate...
Coke Tin Plate...Bars...Rods...Cold Finished Carbon
and Alloy Steel Bars....Wire...Tie Plates and Spikes.

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#### CAM YOKE ROLLER BEARING



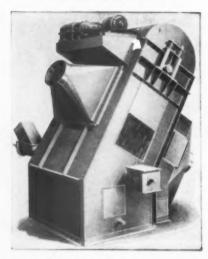
MULTIROL cam follower type CYR bearing is built with an inner race to increase adaptability where mounting by the conventional cam follower stud is undesirable. Shaft sizes range from .250 for the

CYR-3/4 to 1.250 for the CYR-4, the largest standard stock size. Internal construction of the bearing has an extra heavy outer race section and a full complement of small diameter rounded end rollers. Roller end plates are permanently secured to inner ring shoulders. Bulletin #CY-47 available. McGill Manufacturing Co., Inc., Valparaiso, Ind.

STANDARD WIDTH BEARING WITH SINGLE ROW OF BALLS SERIES W-PP, Wide Type Plya-Seal Ball Bearings, are same width as the stan-

dard double-row ball bearing but incorporates only a single row of balls. Plyaseals are provided on both sides for retention of lubrication and exclusion of foreign material. Self-contained antifriction unit carries a large sealed-in supply of factory packed grease said to be ample for years of operation. They are produced in bore sizes from 20 to 70 mm. Fafnir Bearing Company, New Britain, Conn.

#### DRYER AND COOLER



MULTI-LOUVRE dryer (or cooler) is designed for materials requiring short treatment time and/or multiple drying temperatures. Materials may be dried, cooled and processed in the same unit. The moving element in the dryer consists of two strands of roller chain with specially designed flights, suspended in such a way as to provide means for keeping the bed in a constantly flowing mass. A wide variation of temperatures can be used with the dryer. Book No. 2209 available. Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill.

#### POLY-ETHYLENE GLYCOL ESTERS

POLYETHY-LENE glycol esters, known as Quakesters, are active surface ingredients of the non-

ionic type that can be used in the manufacture of cosmetics, pharmaceuticals, paper, textile finishing materials, paints, inks, emulsion products, plastic articles, leather and adhesives. Certain specific members are excellent detergents, others are high in emulsifying power. In some usages they are employed as plasticizers and dispersing agents. Water or oil solubility, or dispersibility of individual esters varies, depending on molecular structure. Flexibility of physical and chemical properties permits meeting of a diversity of requirements. Quaker Chemical Products Corp., Conshohocken, Pa.

#### SHEET FEEDING TABLE



HYDRAULIC, toggle-lever type sheet feeding table is designed for handling and feeding to presses and shears loads of sheet steel up to 10,000 lbs. Hydraulic elevation allows leveling of load with press bed for efficient horizontal feeding. Toggle-lever design gives full support to the entire length of the table top. Dimensions: table top 30" wide by 96" long, lowered height 22", elevated height 34' total lift 12". Furnished with one set of 12" dia. wheels, one set of 8" dia. swiyel casters, (illustration shows unit with 4 swivel casters for special requirement, floor lock, two-speed hydraulic foot pump. Additional data available. LYON-Raymond Corp., 3757 Madison St., Greene, N. Y.

#### RUNNING TIME METER FOR USE ON A-C CIRCUITS

TIME totalizer or running time meter features a counter that can be reset to zero, is designed for use on a-c cir-

cuits, and automatically registers total operating or idle times of any circuit, machine or system. Five-digit revolution type counter indicates in tenths up to 10,000 hours, then repeats. Available in 3 models: Type E5 for table use: Type E6 for conduit connection; and Type E7, 3¾" dia. instrument for flush panel mounting. Cramer synchronous motor used is of the slow speed self-starting type, which will start and operate on rated voltage plus 10%. R. W. Cramer Co., Inc., Centerbrook, Conn.

#### AUTOMATIC PUNCH PRESS

TWELVE - TON high speed automatic press with automatic roll feed and variable speed drive accommodates standard die sets measuring to 8½" x 6½" or special die sets measuring to 8" x



12" Stock to 4½" may be employed, and length of feed is adjustable to 6". Variable speed drive permits operation between 65 and 300 strokes per minute. Power is supplied by a ½ hp, 1725 rpm, 220 volts, 60 cycle, 3-phase a-c motor mounted under the bed. Press is available with a 1", ½" or 2" stroke. It occupies a floor space of 32" x 40", has an overall height of 66". Literature available. Di Machine Corp., 2711 W. Irving Park Rd., Chicago 18, Ill.

#### DISK SANDER AND GRINDER

SUITABLE for wood, plastics and grinding metal. Model 1-A Apex 16" sander and grinder features

tilt-back guard, slot-free table, and squaring bracket. The machine is built for production use. It has a base of heavy cast iron, and a table with a precision ground top. Table is 10½" x 22½" overall, width 22½". It has a ¾ hp ball bearing motor (single or 3-phase) with toggle switch. Darling Mfg. Co., 8681 Madison Ave., South Gate, Calif.

#### ENGINE-DRIVEN WELDER



FLEXARC lightweight engine-driven welder, called "The Ranger", is designed for 200 amperes at 30 volts on the basis of 50 per cent duty cycle. Each welder comes with accessories complete, ready to weld. This d-c welder can be towed anywhere a jeep can take it. According to the manufacturer, design characteristics of the generator provide easy striking and maintenance of the arc for shop quality welding on steel, cast iron, alloys, hard surfacing aluminum and brass. The generator is direct-connected to a Hercules IXB engine. Westinghouse Electric Corp., P.O. Box 868, Pittsburgh 30, Pa.

(Please turn to page 158)



# "ROUGHING IT" THE EASY WAY

Another problem solved by BWH!

Applying a new facing to a big western dam posed a problem for the contractor. The old face had to be "roughed" with compressed air into an irregular pattern to hold the new concrete. This meant finding an air hose that could "take" high pressures, heat and oil from the compressors, shocks from sharp falling rocks and contact with rocky surfaces. To handle this job, BWH recommended tough Bay State Air Drill Hose.

The tube of this rugged hose is made with the highest-quality rubber . . . able

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to withstand the deteriorating action of hot oils. Several plies of strong duck, bonded together with long-life, quality-controlled friction, form the carcass. Since the contractor selected  $2\frac{1}{2}$ " hose, the duck had to be 40% heavier than for smaller sizes.

Tube and carcass were encased in a rugged rubber cover . . . the strongest ever devised to resist abrasive surfaces. This powerfully built hose performed perfectly . . . helped the contractor finish the job without costly delays.

Bay State Air Drill Hose is just one of the many quality products manufactured by BWH. Whatever industrial rubber goods you need, look to BWH for dependable ruggedness . . . to BWH distributors for dependable service.

#### HAVE YOU A JOB WHERE STAMINA COUNTS?

Bring us your toughest problems . . . we're specialists in solving them. Consult your nearest BWH distributor, or write direct.

Another Quality Product of

#### BOSTON WOVEN HOSE & RUBBER COMPANY

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years.. SIGN CREAT LINE YOU can make your factory bigger, multiply your manpower, speed up production, cut down overhead and Save Money with L-S POWER FORK TRUCKS . POWER JACKLIFTS MECHANICAL JACKLIFTS • SINGLELIFTS HYDRAULIC HANDLIFT TRUCKS STACKERS . PALLET STACKERS CRANES . PALLET TRUCKS FLOOR TRUCKS . SKIDS Write for Catalog of A Great Line MARK Materials Handling Equipment WIS-SHEPARD PRODUCTS INC. REPRESENTATIVES IN PRINCIPAL CITIES CONSULT YOUR PHONE DIRECTORY

#### BORING AND TURNING MACHINE FOR PRECISE SECOND OPERATION WORK



CONTOUR boring and turning machine is designed to perform precision second operation work. In addition to the regular jobs of straight boring and turning, facing and chamfering, the com-

pound action obtained from contours on the two cams directs the single point tool in producing lands, steps, recesses, flanges, counterbores and radii. The tool is fed free to the bottom of the bore and cuts on the drawback stroke. For jobs too complicated for a single point tool, a tool cluster may be arranged. Catalog available. New Britain-Gridley Machine Division, New Britain Machine Co., New Britain, Conn.

#### APPLIANCE THERMOSTATS HIGH & LOW TEMPERATURES

THERMOSTAT known as the Appliance Thermoswitch Control is available in two models: high tem-

perature model provides control over the range 175 F—600 F; low temperature model provides control throughout its range of 50 F—250 F. Features claimed include: one-piece, welded case and cover; torque applied to terminal binding posts will not shift contact support members; temperature adjusting screw will not drift under normal vibration; mounting bracket provides for side or bottom mounting. Overall case dimensions: ½" high x 5%" wide x 2½" long. Maximum load rating: 1200 watts on 110 volt 60 cycles. Femval, Inc., 31 Pleasant St., Ashland, Mass.

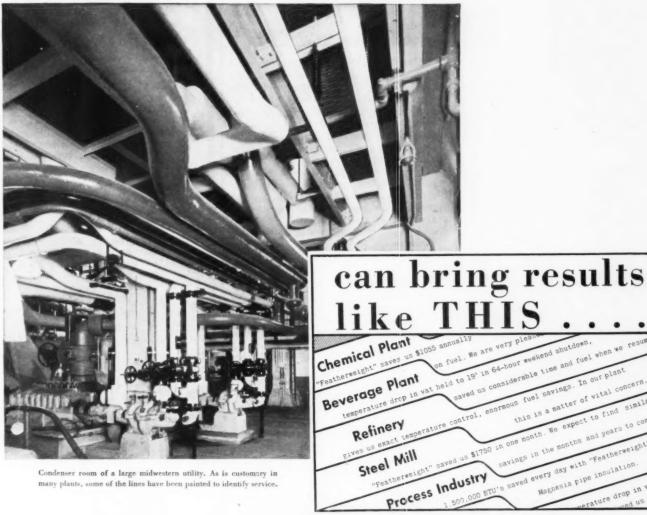
#### ELECTRIC SHOVEL SCOOP TRUCK



ILLUSTRATION shows scoop-dump electric truck equipped with a lift mechanism which permits the operator to lower the scoop for self loading, and to raise it to the desired height for dumping. A dump mechanism makes it possible to tilt the scoop at a wide range of angles and thereby regulate the rate of discharge. The truck is said to be useful in the construction and ceramic industries, waste handling, road building, batching food products, batching plastics and in many other fields where loose materials are handled. Yale & Towne Mfg. Co., 4530 Tacony St., Philadelphia 24, Pa.

(Please turn to page 160)

### ... how the right INSULATION



many plants, some of the lines have been painted to identify service.

#### K&M "Featherweight" 85% Magnesia



Closeup view of K & M 85% Magnesia Insulation, omplete with Canvas Jacket, on portion of piping.

You're sure to lower your fuel consumption, increase efficiency when you specify K&M "Featherweight" 85% Magnesia Insulation. You have more than just our word for it . . . actual performance under a wide variety of service conditions has proved "Featherweight" to be the most efficient insulation of the moulded type, for temperatures up to 600°F.

In "Featherweight," you get the structural strength of asbestos fibre and the insulating perfection of magnesia . . . a light-weight, durable, fireresistant combination that will give you optimum service over an indefinite period of time.

K&M Distributors, located strategically throughout the country, are expert applicators of K&M insulation materials. Let them help you gain substantial savings in your plant. Write for full details.

Nature made Askestos . . .

Keasbey & Mattison has made it serve mankind since 1873



Reg. U. S. Pat. Off.

KEASBEY & MATTISON COMPANY · AMBLER · PENNSYLVANIA



• Safety equipment must be well made, durable, properly designed for wearing comfort, and dependable at all times. Products that are "just good enough" can be real hazards. Likewise, worn-out equipment offers border-line pro-

WHEN QUALITY

EQUIPMENT IS LACKING?

#### AN EFFECTIVE SAFETY PROGRAM DEMANDS THIS ...

Use quality safety equipment. Use CESCO, because CESCO equipment exceeds safety standards. Every Cesco product is made of highest quality material, and embodies expert workmanship. CESCO quality is backed by 44 years experience in manufacturing safety equipment.

So, standardize on CESCO and watch your accident rate go down.

#### CHICAGO EYE SHIELD COMPANY

2320 Warren Boulevard



#### HYDRAULIC CONVERTIBLE DIE CASTING MACHINE



MODEL HD-302 hydraulic operated die casting machine is a heavy duty type, convertible from normal cold chamber operation to optional hot chamber operation. As a cold chamber machine (illustrated) it normally casts aluminum, magnesium and copper-base alloys, although zinc, tin and lead alloys may also be cast. The machine is capable of casting up to 11.6 lbs. of aluminum alloy or an equivalent volume of other materials. It can be converted to hot chamber operation in less than 30 minutes by installation of a self-contained conversion unit. Complete engineering information available. H. L. Harvill Mfg. Co., Corona, Calif.

#### **PRECISE FURNACE TEMPERATURE** CONTROL

ELECTRONIC pyrometer controller for electronic heat control of furnaces, melting pots,

kilns—any heating device using electricity, gas or oil, is precise instrument for both production or laboratory operations. Pyrometer movement is double-pivoted on jewelled bearings; 6" mirrored scale is easy to read. Bulletin 3197-C. Illinois Testing Laboratories, Inc., 420 No. La Salle St., Chicago, Ill.

#### LIFT TRUCK ACCESSORY FOR LATERAL MOVEMENT OF LOADS



FORK lift truck accessory, known as the Side Shifter, permits lateral movement of a load, on forks or pallet, to either side, without necessity for repositioning the truck itself. The accessory is hydraulically operated through a double-acting cylinder controlled by a lever mounted conveniently to the operator. and will move the carriage face and the forks 31/2" in either direction. It is applicable in any industry utilizing fork lift trucks and is designed to operate with standard Towmotor forks or Priester or Schmidgall forks. Towmotor Corp., Cleveland 10, O.

(Please turn to page 162)



#### KENNAMETAL CEMENTED CARBIDE TOOLS, BLANKS, and SPECIALTIES

- FOR FAST, ACCURATE METAL-CUTTING . . . complete selection of single-point tools and milling cutters.
- RESIDENT TOOL ENGINEERS in 24 cities available for expert help in proper selection and correct use.
- WAREHOUSES in Chicago, Cincinnati, Los Angeles, New York, and San Francisco to expedite delivery.



KENNAMETAL Sec., LATROBE, PA.



Spring WASHERS

#### **Bolted** assemblies permanently

BEALL SPRING WASHERS, with live, long-range action compensate for ALL causes of looseness including vibration, bolt stretch, wear, rust and break-down of finish under the nut and bolt head.

IN STOCK in all Standard Sizes; made of Carbon Steel, Stainless Steel, Everdur and Duronze.

TOOL DIVISION (HUBBARD & CO.)

160 Shamrock St. EAST ALTON, ILL. For Cost rie Castings

Because

DIE CASTING is the shortest route from raw material to finished part.

liquid metal is fed in one end of the casting machine and within a few seconds, the other end delivers a finished casting practically ready to use.

DIE CASTINGS are produced in zinc—aluminum—magnesium brass—tin—lead alloys, whichever most economically and functionally meets your needs. Castings can be finished by us in nickel-chrome-copper-enamel and paints of all colors.

our plants at:



are strategically located to serve your plants in close proximity.

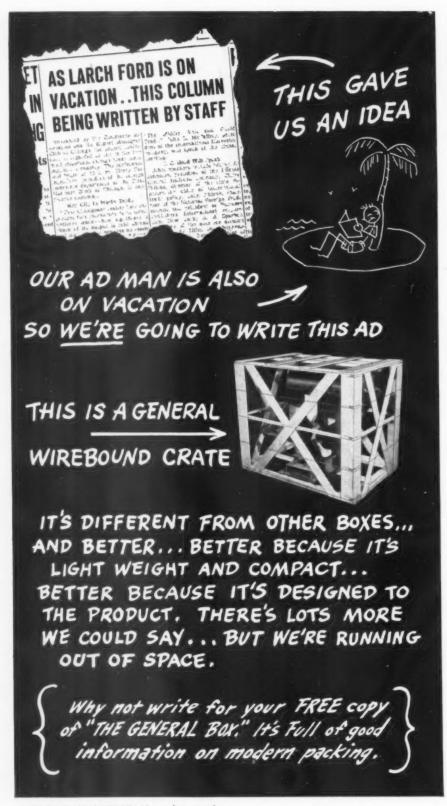
## Doehler-Jarvis Corporation

The World's Largest Producer and Pinisher of Die Castings



Executive Office 386 FOURTH AVENUE NEW YORK 16, N.Y.





IMPORTANT NOTICE: New plants and expanded production facilities are now in full operation. Your inquiry or order will receive prompt attention.

#### General BOX COMPANY

GENERAL OFFICES: 48 W. Illinois St., Chicago 10, Ill. DISTRICT OFFICES AND PLANTS: Brooklyn, Cincinnati, Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, New Orleans, Sheboygan, Winchendon, Natchez.

Continental Box Company, Inc.: Houston, Dallas.















#### HEAVY-DUTY GRINDER



ILLUSTRA-TION heavy-duty grinder, designed to fit the operator's hand. and driven by a Duro universal motor that develops 42 watts output at approximately 20,000 rpm.

The grinder operates on 60 cycles or less, a-c or d-c. The threaded type collet chuck overhangs the housing only 5/16", making it easier to do precision work. Two collets, one for 3/32" shanks and one for 1/8" shanks are included. Standard grinders are 110 volt, and 220 can be supplied. Duro Metal Products Co., 2651 N. Kildare Ave., Chicago 39,

SKIN CREAM **FORMS** PROTECTIVE FILM

APPLIED to the hands, Cadet Hand-Saver skin cream forms a cellophanelike film that is said to guard

against inflammation, irritation and infection caused by most skin irritants. It is made of pure emulsified fats and oils and is harmless to the most sensitive skin, it is claimed. With the addition of a little water the cream forms a lather that removes grime, grease and dirt. Cadet Laboratories, Inc., Worcester 5, Mass.

#### CURVED TOOTH FILE



SELF-CLEARING or non-clogging feature of the Heller Vixen Wizcut file is obtained by incorporating in the standard design serpentinelike chip-breaking grooves superimposed on the curved contour of the milled teeth. This clears the file of chips readily and avoids loading when working with soft metals, according to the manufacturer. The Wizcut cuts with a shearing action, whether the fileis pushed straight ahead or at an angle. Improvement in cutting and finishing materials such as fibre and soft, sticky metals is claimed. Heller Brothers Co., Newark, N. J.

(Please turn to page 168)

ROT

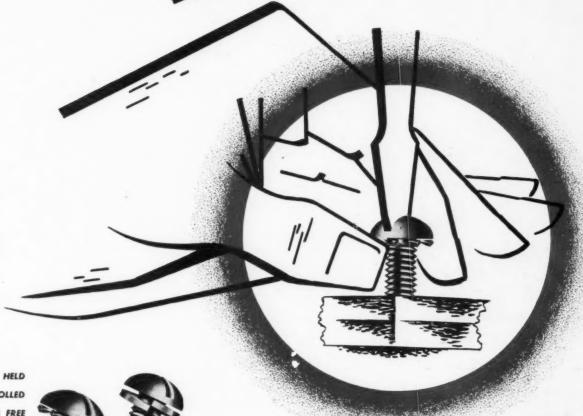
HE WA

HREAD

TWO UNI

The

# Easier handling... Lower cost assembly



HE WASHER IS HELD ON BY THE ROLLED THREAD AND IS FREE O ROTATE!

# save money with SEME



TWO PARTS PRE-ASSEMBLED; ONLY ONE UNIT TO ORDER, STOCK AND HANDLE.



NO DROPPED OR WASTED WASHERS.
ASSEMBLY MOVES SMOOTHLY.



SEMS ELIMINATE COSTLY HAND ASSEMBLY; SAVE TIME AND LABOR!

#### ANY OF THESE MANUFACTURERS WILL SEND YOU THE SEMS DATA BOOK, FREE!

National Lock Co. Rockford, Illinois

The National Screw & Mfg. Co. Cleveland, Ohio

> New England Screw Co. Keene, N. H.

Pheoli Manufacturing Co. Chicago, Illinois Russell, Burdsall & Ward Bolt & Nut Co. Port Chester, N. Y.

Scovill Manufacturing Co.
Waterville Division
Waterville, Conn.

Shakeproof Inc.

Division of Illinois Tool Works Chicago, Illinois Steel Co. of Canada, Ltd. Hamilton, Ont., Can. Stronghold Screw Products Inc. Chicago, III.

American Screw Co. Providence, R. I.

Central Screw Co.

Chicago, III.

Chandler Products Corp.
Cleveland, Ohio

Continental Screw Co. New Bedford, Mass.

Corbin Screw Division
The American Hardware Corp.
New Britain, Conn.

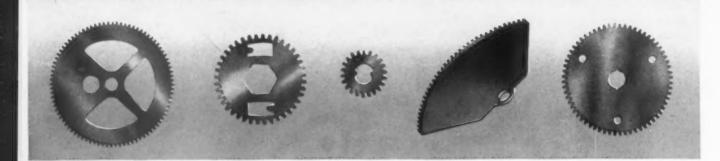
Eaton Manufacturing Co.
Reliance Division
Massillon, Ohio

The Lamson & Sessions Co.
Cleveland, Ohio

ILLINOIS TOOL WORKS . CHICAGO . Licensor of machines and methods for the manufacture of sems



SHAKEPROOF PRECISION STAMPED GEARS



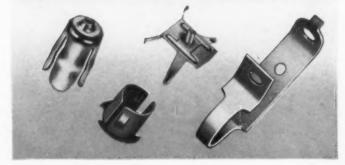
SHAKEPROOF ENGINEERED PARTS



To high production users of metal stampings Shakeproof offers a precision stamping service founded on years of experience in building intricate, precision dies for Shakeproof Lock Washers. High quality Shakeproof Stamped Radio and Instrument Gears are produced to close tolerances on tooth shape, concentricity and tooth spacing and many are available from existing dies which can be modified, with a minimum of new tooling, to meet individual requirements.

Shakeproof Engineered Parts, which incorporate the famous Shakeproof tapered-twisted tooth principle, eliminate the need for separate lock washers. A wide variety of these Engineered Parts, and of plain stampings, are available from standard dies. Others will be made to specification. The entire Shakeproof engineering staff is available to assist you with your special stamping problems. Write for information, today!

SPECIAL STAMPINGS



SHAKEPROOF INC.

" fastening feadquarters"

DIVISION OF ILLINOIS TOOL WORKS . 2501 NORTH KEELER AVENUE, CHICAGO 39, ILLINOIS . OFFICES IN PRINCIPAL CITIES PLANTS AT CHICAGO AND ELGIN, ILLINOIS . IN CANADA: CANADA ILLINOIS TOOLS, LTD., TORONTO, ONTARIO

# ...measured in service and performance

No one can say how long a time, measured in days, months or years, a certain valve will give satisfactory performance. Naturally it will depend on the service conditions—how much the valve is operated and especially the kind of media it controls.

But we can say positively that a valve of absolutely correct design and materials for the conditions under which it operates will last far longer and require much less maintenance than a valve which does not fully meet these requirements.

That's the kind of valves you get when you standardize on the Powell Line for all your flow control requirements. Because through more than a century of making valves—and valves only—Powell has concentrated on developing a complete line of valves—in bronze, iron, steel and the widest range of corrosion-resistant materials ever used in making valves—to meet every requirement of modern industry.

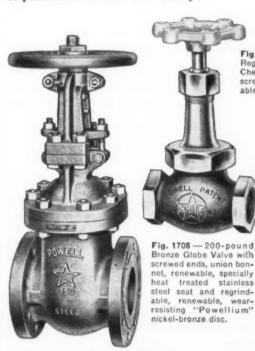


Fig. 560 — 200-pound Bronze Regrinding Horizontal Swing Check Valve. Screwed ends, screwed-on cap and regrindable, renewable bronze disc.



Fig. 375 — 200-pound Bronze Gate Valve with screwed ends, inside screw rising stem, union bonnet and renewable, wearresisting "Powellium" nickel bronze disc.



Fig. 1793—Large 125-pound Iron Body Bronze Mounted Gate Valve. Made in sizes 2" to 30", inclusive. Has outside screw rising stem, bolted flanged yoke and taper wedge solid disc. Taper wedge double disc can be provided in sizes 2" to 12", inclusive.

Fig. 1503—Class 150-pound Cast Steel Gate Valve. Has flanged ends, outside screw rising stem, bolted flanged yoke and taper wedge solid disc.

The Wm. Powell Co., Cincinnati 22, Ohio DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

POWELL VALVES

# Tis aesign job is easier



TO A design engineer like Arnold Eckhart, Sr., of the Eckhart Manufacturing Co., the new small-power motor standardization program makes good engineering sense. It means, for one thing, that designers are going to have a much simpler motor selection job. With standardization of ratings and performance, they are going to know in advance just what load a motor can safely carry. They are going to have greater assurance that the motors they specify are engineered specifically to give dependable service on the particular type of equipment they design.

ARNOLD ECKHART, SR.,
President and Chief Design Engineer, Eckhart Mfg. Co.

More for your money with STANDARD



fractional horsepower MOTORS

FOR EXAMPLE General Electric oil burner motors give you the economy of standard design in a motor that is tailor-made for oil-burner service. Meeting the requirements of Underwriters' Laboratories, Inc., these motors give years of quiet, reliable operation. Their trim good looks harmonize with modern burner design.

THE NEW STANDARDS to which General Electric fractional horsepower motors are being built were not set by G.E. Nor were they set for the convenience of any other electrical manufacturer. Rather, they are the result of co-operative effort on the part of motor users, your industry associations, and the National Electrical Manufacturers Association. They represent the













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Unit-Bearing Fan

Washing Machine

Oil Burner

Machine Tool

Gas Pump

Hermetic Refrigeration



F. V. OWEN, Director of Purchasing, Tecumseh Products Co.

FRACTIONAL horsepower motor standardization is a "natural" for the purchasing agent. No wonder F. V. Owen, Director of Purchasing, Tecumseh Products Co., says: "I can see how, by sticking to standards, we'll have a better chance of getting off-the-shelf motor deliveries. This will mean fewer purchasing, inventory, and stocking problems. Moreover, standardization will give us wider

# worres are less

interchangeability of motors from different manufacturers.

"In the long run, too, you should be able to give us more motors for our money."

best co-ordination of motor design with the current needs of fractional-hp motor users. As the needs of motor users change, moreover, these standards will be changed. They will be modified and modernized to reflect continuously the trends in user industries. This standardization is not static!—and it is not limiting to the designer. General Electric now produces the 11 groups of definite-purpose motors shown, each specifically engineered to meet the needs of a certain application, and 11 types of general purpose motors. (More groups will be added.) In each group you will find a full range of ratings-a total of more than 1600 standard motors to choose from.

#### **NEW BULLETIN DESCRIBES STANDARDS**

To help you determine just how the new NEMA standards will affect your motor selection problems, we have prepared a brief, but concise bulletin which tells what the standards are and how they are applied. Ask your local G-E office for bulletin GES-3565-and for data on any of the motors listed below-or write Apparatus Dept., General Electric Co., Schenectady 5, N. Y.

#### GENERAL





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**Belted Fan** 



Coal Stoker



Jet Pump



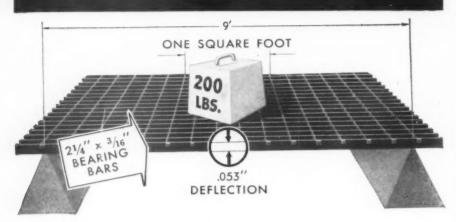
Shaft-Mounted Fan





**General Purpose** 

#### This is TRI-LOK OPEN STEEL FLOORING



The locked in strength of TRI-LOK enables it to stand up under heavy loads—even on long spans. No rivets, bolts or welds are used in its construction, thus, the possibility of loose joints is eliminated. Write for Bulletin 1140.

#### DRAVO CORPORATION NATIONAL DEPARTMENT

1103 Pitt Bank Building, Pittsburgh 22, Pa.

(Distributors for THE TRI-LOK COMPANY)



# Seats every worker RIGHT-for every Job!

You are sure of "height that's right" for every worker when you choose Kewaunee Automatic Adjustable Chairs and Stools. That extra comfort feature has a definite effect on production by lessening fatigue. Split-second adjustment to the right height is made automatically by the worker. Lifting the seat locks it firmly at desired height. No fussing with screws, bolts or tools.



## SENTANDEE AUTOMATIC ADJUSTABLE CHAIRS and STOOLS

4 HEIGHT RANGES-12-15", 15-20", 18-26", 24-35"

Why not keep your personnel at the proper level for peak production? We'll send you a Kewaunee Chair or Stool on a 30-day trial at no cost or obligation. Write for circular and full details.

C. G. Campbell, President

KEWAUNEE MFG. CO., 5006 S. Center St., Adrian, Michigan

#### PATCH TYPE GLOVES

N E O P R E N E patch type glove has corrugated patches on palm, thumb and fingers to provide gripping action in key spots. The patches extend over the end of the fingers, to guard against



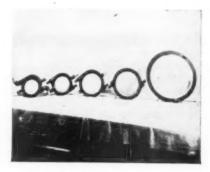
slippage and provide double thickness at points of greatest stress. Made of the same material as the glove, the patches are uncured when first attached and are cured along with the glove itself to insure permanent adhesion. The glove is available in sizes 10 and 11, in black. Surety Rubber Co., Carrollton, O.

LAMINATED PLASTIC FLOOR TILE PLASTILE is composed of 3/32" layer of vinyl compound bonded to 3/32" resilient base of synthetic im-

pregnated cord, and is said to have excellent resistance to heavy foot traffic along with quietness. It is available in wide range of colors in standard tile sizes of 8½ x 8½ and 9 x 9 inches and in sheets 35 x 35 inches. Plastile is not affected by acids, alkalis, oils, grease or any type cleaning fluids. It maintains a shiny surface and does not require waxing. Also, it is said to be non-slippery when wet. Plastile adheres to any surface with ordinary linoleum cement. U. S. Stoneware Co. Akron. Ohio.

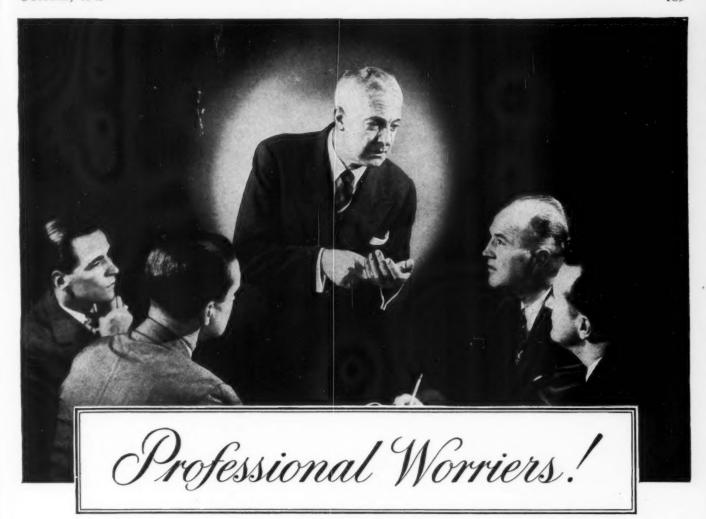
#### LARGER QUENCHING RINGS

STANDARD Lepel quenching rings for use in semi-automatic hardening of gears and similar parts are available in



sizes ranging from four to 18 inches, inside diameter, and are interchangeable. The rings are designed for use in a standard Lepel Roto-heating and quenching unit and tank. Gears are dropped into the lead coil, a button pressed, and heating and quenching take place automatically. Advantages cleamed are speed of operation, and the fact that skilled operators are not required to assure uniformity, control of hardness and depth of penetration. Lepel High Frequency Laboratories Inc., 39 West 60th St., New York 23, N. Y.

(Please turn to page 170)



Every business, time and again, runs into production snags. When the problem is lubrication, we're often called in to do the worrying. And eight times out of ten we come up with the right answer-fast. Because that's our job day in, day out, year after year-putting petroleum to work efficiently. This backlog of experience, coupled with the world's finest lubricants and fuels, is your best reason for calling Cities Service next time trouble calls on you.

#### CITIES SERVICE STOPPED TROUBLE HERE!



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New

A screw products company in Cuyahoga Falls, Ohio, called on Cities Service for advice on machining a part of an intricate mechanism made of aluminum that required extreme

accuracy and finish. Chillo Oil No. 22 was recommended. Thereafter, the manufacturer reported the machined work was not only well within the required tolerances, but the work had a mirror-like finish. Tool life was also phenomenally good.

A brick and tile company in Iowa suffered numerous failures of the main drive-shaft bearings in their Hammer Mill Crushers. Cities Service engineers recommended Pacemaker Oil No. 2. The last report from the company said that since they standardized on this lubricant, no bearing

failures have occurred.



"We use Solvent No. 26 for cleaning surplus oil and grease out of electric clock movements and we find it unexcelled for this purpose" ... so writes the president of an Illinois watch repairing and rebuilding concern after continued use of this

ARKANSAS FUEL OIL CO.

SERVICE

Shreveport, La.

remarkable new Cities Service metal cleaning fluid.

A bus company executive in Cleveland, Ohio, recently said, "During the past four years, we used Cities Service Heavy Duty type oil with outstanding results-minimum wear, freedom from sludge and no engine



failures-which has enabled us to give uninterrupted service to our customers.'

Cities Service Oil Company Room 235 Sixty Wall Tower New York 5, N. Y.

Gentlemen: I have a production problem that involves lubrication. I would like to discuss it with one of your lubrication engineers, without obligation, of course.

NAME	 	
COMPANY	 	
ADDRESS		

STATE\_

CITIES SERVICE OIL CO.

New York - Chicago



#### **DROP FORGINGS**

#### Maximum Strength and Accuracy in Metal Parts

Widely used for equipment parts and tools where strength and accuracy are essential, RITCO Bright Finish Drop Forgings save machine time. Smooth and flash-free, they are produced to your blueprint in steel or non-ferrous metals, from ¼ lb. to 15 lbs. Complete facilities available for finishing — machining, grinding and assembling.

Estimates gladly submitted



#### RHODE ISLAND TOOL COMPANY

148 West River St., P. O. Box 1516, Providence 1, R. I.

Serving American Industry
Since 1834

SPRING THREADING TOOL



ELIMINATION of the gooseneck and employment of a new principle in the Ideal Threading Tool Holder is claimed to reduce by more than 40% the operating time required to cut a thread in a lathe. The tool holder is made to hold a single point cutting tool, and is constructed so that the cutting tool retracts in a horizontal plane away from the work when the pressure is too great for efficient cutting, preventing breakage of the tool point or damage to the work piece. An adjustment permits increasing or decreasing the horizontal pressure while the tool is cutting. The shank of the tool holder is ½" wide 1" high, 5" long. The greatest height is 2" and overall length is 6". Guarantee Tool Co., Inc., 96 Maple St., West Orange, N. J.

#### DRY CHEMICAL FIRE EXTINGUISHER

FOUR-pound model dry chemical fire extinguisher, known as the Ansul 4, is 19½" long and 3½" in diameter. Designed for

use by inexperienced operators, it is said to be suitable for extinguishing fires in flammable liquids, gases, solids and electrical equipment, and for controlling fires in ordinary combustibles. The extinguishing agent is claimed to be nontoxic, non-corrosive, non-abrasive and a non-conductor of electricity. It can be recharged on-the-spot after use. Fire Extinguisher Division, Ansul Chemical Co., Marinette, Wis.

#### PORTABLE WELDING OUTFIT



ELECTRIC portable welding outfit is called the Porto Welder and comes fully equipped with: carrier case; welding mask and headboard with shatterproof glass window; multi-heat power supply; combination flame and are welding torch; clamp and cable for are welding; asbestos block, brazing, welding and aluminum rods; flux; instruction manual. It is designed for production or repairs in factory and maintenance shops and for building repairs. Lemarc Products, Inc., 7 Boerum St., Brooklyn, N. Y.

(Please turn to page 174)

## SIMONDS GEARS



SPUR . BEVEL

- MITRE WORM WORM GEARS •
- . RACKS

Large diameters! Heavy types—in cast or forged steel, gray iron, bronze, silent steel, raw-hide or bakelite. Over 50 years' experience in quality gear making!



Stock Carrying Distributors of Ramsey Silent Chain Drives and Couplings • Emergency Service!

# SIMONDS GEAR AND MFG. COMPANY Liberty at 25th + Pittsburgh 22, Pa.

# SHELDON

No. 8000 12" Back Geared Shaper



Engineered to meet today's demand for close tolerance work at a wide range of speeds . . . for a compact, easy to operate shaper that is sturdy enough for production use, still accurate enough for the tool room . . . for a capable full sized (1800 lb.) shaper at a low price.

Here is a modern shaper with features you should know about. Write for Bulletin 547B.

#### SHELDON MACHINE CO. Inc.

4253 Knox Ave.

Chicago 41, U.S.A.

#### • ENGINEERED AND MOLDED AT NO. I PLASTICS AVENUE



#### Ever see rubber like this?

● Here's an amazing kind of rubber! Bake it in an oven, immerse it in a dry ice bath, and it remains resilient and flexible. It's the new General Electric silicone rubber that withstands heat up to 520 F, cold down to -55 F.

Improved molding and fabricating techniques used by General Electric make possible a whole new field of applications for this remarkable silicone product. Used during the war for gaskets in high-heat searchlights and airplane superchargers, General Electric silicone rubber is now being applied

extensively to electrical equipment of many types, heat-sealing apparatus, baking ovens, diesel engines and highvacuum systems.

The successful application of this remarkable material to many industrial products grows out of General Electric's complete plastics service—equipped to design, engineer and mold all types of plastics to meet your individual requirements. For more information on silicones, or plastics, write Chemical Department, General Electric Company, Pittsfield, Mass.

## GENERAL & ELECTRIC

GENERAL ELECTRIC PLASTICS FACTORIES ARE LOCATED IN SCRANTON, PA., MERIDEN, CONN., COSHOCTON, OHIO, FORT WAYNE, IND., TAUNTON AND PITTSFIELD, MASS.

#### G-E Complete Service — Everything in Plastics

#### BACKED BY 53 YEARS OF EXPERIENCE.

We've been designing and manufacturing plastics products ever since 1894. G-E research works continually to develop new materials, new processes, new applications.

NO. I PLASTICS AVENUE —complete plastics service—engineering, design and mold-making. Our own industrial designers and engineers, working together, create plastics parts that are both scientifically sound and goodlooking. Our own toolrooms are manned by skilled craftsmen—average precision mold experience, 12 years.

pression, injection, transfer and cold molding ... for high and low pressure laminating... for fabricating. G-E Quality Control—a byword in industry, means as many as 160 inspections and analyses for a single plastic part.



# What to look for in a good Flatting Brush



1. Finest Chinese bristles should be boiled, straightened and scientifically mixed, as in the Rubberset process, to guarantee uniformity and perfect performance.



2. Nylon brushes give you maximum paint pickup and delivery when filaments are crimped with the Permanent Wave, exclusive Rubberset development.



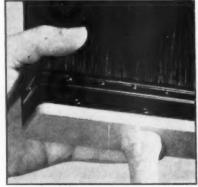
**4.** Slightly chiseled tip eliminates breaking-in—assures smooth, even film from the first dip.



5. Minimum of short length bristles on outside of brush prevents splattering of paint.



**7.** To test permanency of setting, hit bristles lightly against table edge. (Rubberset's exclusive setting locks bristles everlastingly in place.)



8. Ferrule should be beaded for additional strength and rigidity, securely nailed to block.

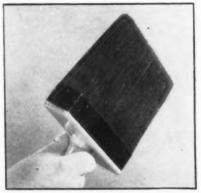
# RUBBERSET

Made only by

The Rubberset Company, 56 Ferry Street, Newark 5, New Jersey. Established 1873. Factories: Newark, N. J., Salisbury, Md., Gravenhurst, Ont., Canada—Branches: Los Angeles, Cal., St. Louis, Mo.



**3. Full stock** of carefully selected lengths of bristle to assure speedy, even flow of material over large surface areas.



**6.** Bristles set at slight angle assures perfect taper to chisel tip. Full weight of bristles should be at working end.



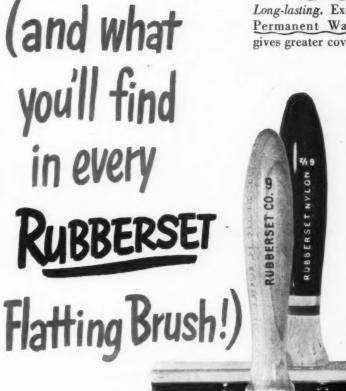
**9.** Look for the name Rubberset—not just "Set in Rubber." Only a genuine Rubberset brush carries the Rubberset guarantee.

#### #472—Pure Bristle Made of finest imp

Made of finest imported hog bristles for smooth, fast performance.

#### #1472 - Permanent Wave Nylon

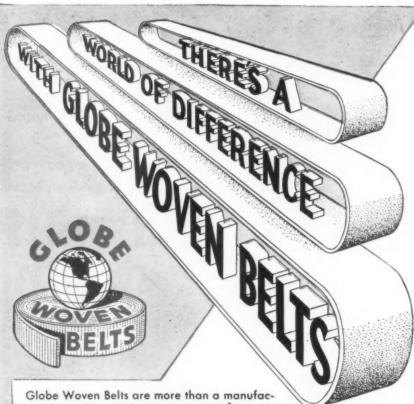
Long-lasting. Exclusive Rubberset Permanent Wave development gives greater coverage.



# BRUSHES

the Rubberset Company

by



Globe Woven Belts are more than a manufactured product. Globe Belts are the outcome of practical research on every particular use to which they may be put. Globe Belts are the result of experienced, painstaking workmanship by artisans who know and like their job of making quality beltings. Globe Belts have proved their long-wearing material and efficient operation.

Yes—there's a world of difference in GLOBE Woven Belts. It will pay you to find out.

There's a 'specially engineered and tested-by-use Globe Woven Belt for practically every need of industry. For instance:

KANRY-TEX: The superior belting for food processors.

**SOLID WOVEN WHITE COTTON:** "Tops" for light conveyor purposes.

**ENDLESS WOVEN:** No slippage: no vibration —for high-speed use.

**CELLULOSE-COATED:** For bakery and candy manufacturers.

Many other GLOBE beltings are available for whatever particular use you may have. Your mill supply house (or we ourselves) will be glad to provide a complete list of GLOBE products. And at the same time give you proven facts and figures on their long-lasting and economical qualities.

# GLOBE WOVEN BELTING CO. 1898 CLINTON STREET BUFFALO 6, NEW YORK

#### SOCKET TYPE CABLE TERMINALS



"SOCKETYPE" cable terminals consist of an alloy steel cadmium plated eye or fork type fitting, plus a stainless steel sleeve for swaging to cable (wire rope). They are available loose or attached to the rope in a complete cable assembly to specification length. They have been approved by Civil Aeronautics Administration for use at 100% of the rated strength of the cable to which they are properly attached. The terminals save cable and allow the cable to swivel freely when load free, which eliminates kinking, manufacturer claims. They were formerly known as PN socket type cable terminals. Specification literature #47-46 available. Macwhyte Co., Kenosha, Wis.

#### MINIATURE PERMANENT MAGNET MOTOR

MINIATURE permanent magnet motor is operated from a small amplifier tube, flashlight type battery

or similar source. It is made for operation in self-contained units where a minimum input is of primary consideration. Electrical characteristics are: at "no load", 1½ volts, d-c, 0.23 amps., 5300 rpm. At "load" (1.5 oz. at ½" radius) 1½ volts d-c, 0.8 amps., 3000 rpm, 0.0005 hp, 34% efficiency. Weight, 3¼ oz.; dimensions, 1½" x 1-1/32" x 1½"; shaft extension, diameter 0.0940/0.0934; length 5/32". Essell Corp., 19 Euclid Ave., Newark 5, N.J.

#### COLLAPSIBLE HYDRAULIC LIFT



LIFT truck has a hydraulic lift that will handle 6000 lbs. to a height of 8 ft., or 4000 lbs to 11 ft., and collapses into the truck body like the bellows of a camera. With the lift in lowered position there is no track or front obstruction to prevent the lift from passing under low head clearance. Known as the Wagnermobile lift, it weighs 7425 lbs. with fork and boom, and can work inside a freight car. It has attachments for handling a wide variety of materials. Hydraulic control is incorporated 100%. A enclosed cab is available, but not standard equipment. Mixermobile Manufacturers, Portland 16, Ore.

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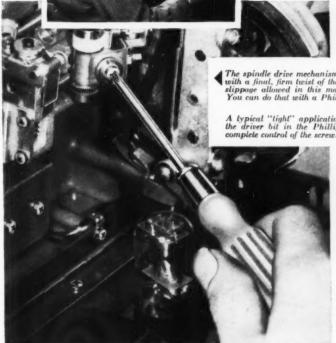
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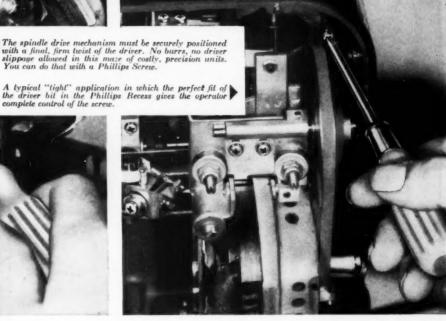
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# "Indispensable to the exacting assembly of precision electronic instruments!"

say the makers of the Gray AUDOGRAPH

High spots from an independent survey . . . part of a continuing study by James O. Peck Co., of assembly savings made with Phillips Screws in leading plants.





"OUR MAJOR PROBLEM on the Audograph, an advanced electronic soundwriting machine," explained Gray's chief engineer, "is assembling small precision components without disturbing fine tolerance or damaging highly finished surfaces. Phillips Screws are the surest solution of that problem.

"PRECISE ASSEMBLY EASIER WITH PHILLIPS.
The perfect fit of the driver in the recessed head speeds finding the thread. Operators easily position each component precisely. Driving

in constricted places and at angles is far easier with Phillips Screws.

"AVOID DRIVER SLIPPAGE. 'Skids' would be very costly where so many precision units and expensively finished parts are compactly assembled. The cost of such damage would be out of all proportion to the cost of the parts . . . when interruption of our production due to disassembly and reassembly is figured in. At several points even a slight burr on a screw head could disturb the precision of a vital part. Phillips Screws remove

the possibility of such damage. "PHILLIPS HEAD IS PART OF SMOOTH STREAM-LINING. The neat, modern appearance of the recessed head complements the ultra modern design of the Audograph."

you'll find answers to questions about your own assembly costs in the complete report of the Audograph assembly . . . and in other reports, covering wood, metal and plastic products . . . FREE on request. Mail the coupon TODAY!

# PHILLIPS Recessed Head SCREWS

Wood Screws . Machine Screws . Self-tapping Screws . Stove Bolts

American Screw Co.
Central Screw Co.
Centinental Screw Co.
Cerbin Screw Div. of
American Hilwe. Corp.
Eleo Teal & Screw Corp.
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Lamssee & Sessions Co.
Milford Rivet and Machine Co
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24 SOURCES

National Screw & Mfg. Co. New England Screw Co. Parker-Kalon Corporation Pawtucket Screw Co. Pheofi Manufacturing Co.
Reading Screw Co.
Russell Burdsall & Ward
Bolt & Nut Co.
Scovill Manufacturing Co.
Stakepreof Inc.
The Southington Hardware Mfg. Co.
The Sut Company of Canada, Ltd.
Starting Bolt Co.
Strongheld Screw Preducts, Inc.
Wolverine Bolt Company

		1 17
-	Suport So. 21	111
1	CAVINGS	111
	ASSEMBLY SA CEREWS	111

Phillips Screw Mfrs., c/o Horton-Noyes 1800 Industrial Trust Bldg., Providence, R. I.

Send me reports on Assembly Savings with Phillips Screws.

Name....

Company...

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Here is a band saw blade of unique design which, on horizontal band saw machines such as Wells, Johnson and Kalamazoo, and on all vertical cut-off machines, will . . .

- • increase blade life an average of 30%\*
- positively eliminate ripping of teeth
- • cut with greater precision and closer tolerances
- \* from actual reports of current users

Originated by MILFORD and discontinued in the interests of standardization during the war. The efficiency of this blade, however, has been so thoroughly demonstrated on the horizontal type of machines now extensively in use, that the 3/4" 10 and 12-tooth wavy set sizes have been added to the standard list and are available for immediate shipment.

Your own machines are your best proving ground. Test a MILFORD **WAVY SET** BLADE against the field!

Order from your Mill Supply
Distributor. He is always
ready to serve your needs
for all factory and mill supfor all factory and MILFORD
blies as well as MILFORD
hack saw and band saw
blades.

#### MILFORD

THE HENRY G. THOMPSON & SON CO.

Saw Specialists Exclusively for Over 65 Years NEW HAVEN 5, CONNECTICUT, U. S. A.

#### AIR-CIRCULATING UNIT



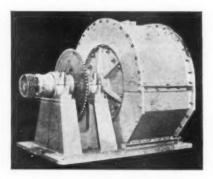
NEW air-circulating and room-conditioning unit, known at Cir-Q-Laire, is a combination exhaust and cooling fan for all-purpose use. Placed in a window as an exhaust fan, it draws out stale air and permits fresh air to enter and circulate. Turned about and placed anywhere in the room it becomes a cooling fan. Designed for use in offices, stores, factorics, etc., it is powered by a fractional horsepower motor, 110 volt, 60 cycles a-c. Cir-Q-Laire Co., Inc., 60 E. 42nd St., New York 17, N. Y.

#### RUBBER CUSHIONS FOR FORGE HAMMERS

S P E C I A L L Y compounded rubber cushions for forge hammers are said to absorb heavy shocks, and

help the hammer give more force and spring to its blows. Their shock absorbing action reduces the danger of flying pieces of crystallized metal. The cushions resist the heat generated by the compression to which they are subjected, it is claimed. Both upper and lower cushions of the same compound can be furnished to size. Additional data available. Quaker Rubber Corp., Comly and Milnor Sts., Philadelphia 24, Pa.

#### NEW TYPE CRUSHER



DEVELOPED for reducing phenolic plastics and other chemical solids, this "Bradmill" crusher is said to produce particles roughly cubical in shape with 100% passing the desired screen size. It combines the impact crushing principle with a screening action. Additional advantages claimed are: all material screened before delivery, minimum of extreme fines, maximum weight of product per cubic inch, minimum of flats and slabs. It has capacities from 300 to 2500 lbs. per hour depending on material and desired reduction, and variable speeds, Pennsylvania Crusher Co., Liberty Trust Bldg., Philadelphia 7, Pa.

(Please turn to page 178)

# Why right angle loading ASSURES LONGER BEARING LIFE

Right Angle Loading splits compound loads into the two component parts of pure radial and pure thrust . . . and carries each of these components on separate bearing assemblies.



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and 2500 and eeds. Trust When the load is pure radial, it bears at a right angle to

- When the load is pure thrust, it bears at a right angle to the rollers.
  - When radial and thrust are combined the two loads the rollers.
    - are resolved separately at a right angle to the rollers.



#### BEARINGS

#### Reduce shut-downs and maintenance costs

They prevent wedging of rollers and pinch-out. Reduce roller end-rub with its wearing friction. Eliminate complicated stresses. Substantially reduce unit pressures. Eliminate compound or oblique loads, and the resultants of oblique loads. Carry greater radial or thrust load capacity in any given dimension. Assure greater resistance to shock loads and vibration. Give longer life expectancy.

#### FREE SERVICE!

Send us a print or detailed statement of load, speed and operating conditions for free analysis and recommendation. Your information is held confidential.

# WRS BERKINGS

ROLLWAY BEARING COMPANY, INC., SYRACUSE, N.Y.

SALES OFFICES: Philadelphia • Boston • Pittsburgh • Cleveland • Detroit • Chicago • Minneapolis • Houston • Los Angeles

# PAGE FENCE-Since 1883

. AMERICA'S FIRST WIRE FENCE .



● Conditions existing at your property may make it advisable for your Page Chain Link Fence to be of rust-immune Page Stainless Steel. Or perhaps your need or preference will favor corrosion-resisting Page Aluminum . . . or Page Copper-Bearing Steel, heavily galvanized . . . or Page-Armco Ingot Iron, purest of commercial ferrous metals. Whatever your problem, the nearest Page Fence Association member will confer with you on fence styles and materials, and will submit cost estimates without obligation. He represents a long-experienced local fence erecting firm which knows regional conditions. Write for illustrated information and we will send name and address of Association member in your vicinity.

For name of nearest member firm, write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, Pittsburgh, New York or San Francisco

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE . BRIDGEPORT, CONN.



VUL-COTS save you money! Made of practically indestructible hard vulcanized fibre—they give increased service, reduced maintenance and replacement costs. Guaranteed for 5 years. Attractive colors in convenient sizes and shapes for every use in office and factory. To save money in handling waste—you're wise to insist on VUL-COTS.

Not available now . . . but worth waiting for.



NATIONAL VULCANIZED FIBRE CO.
WILMINGTON 99 DELAWARE

#### LEATHER V-BELTING



LEATHER V-Belting can be cut from a roll and spliced to fit any required centers. It is made in A, B, C and D sections and is supplied in 100 ft. rolls. It is so cut that side walls are of flat, full grain leather. Belt can be made endless, to fit any drive, either by a lapped splice or by mechanical fasteners. Lap press and tension equipment enables endless installation under any desired tension. Belt chopping device available simplifies job of splicing. Leather V-belting for fractional hp drives in ½", 5/16", ¾" and ½" sizes is available in 100 ft. spools. Chas. A. Schieren Co., 30-38 Ferry St., New York, N.Y.

#### METALLIZING PLASTIC BONDED ROD IN COILS

COLMONOY plastic bonded rod is available in **5-1b.** coils in 1/8" and 3/16" diameters. It is composed of

powdered Colmonoy No. 6. As it passes through flame of metallizing gum, plastic burns out and Colmonoy particles are deposited on surface, molecular bond with base metal being identical to that obtained when same alloy is applied in rod form. Wall Colmonoy Corp., 19345 John Rd., Detroit 3, Mich.

#### SILVER BRAZING & SOLDERING



THIS bench type induction heating machine is designed for silver brazing and soldering, though it is also adaptable for hardening, annealing and forging applications within its power capacity. It is known as the Toccotron, 750 watts, 450,000 cycles. It is of the tube oscillator type and operates from 110/120 volt a-c single phase 60 cycle current source. It is tapped to accommodate either single or multiple turn inductor coils. It does not require water connection. The Ohio Crankshaft Co., 3800 Harvard Ave., Cleveland, Ohio.

(Please turn to page 180)

SHORT ABOUT

# OKOLITE-OKOPRENE

# its OKOLITE insulation

- ... is electrically stable
- ... resists moisture and ozone
- ... operates at 75° C.

# its OKOPRENE sheath

- ... resists corrosion
- ... resists oils and acids
- ... is non-flammable

# OKOLITE-OKOPRENE

- ... serves up to 5000 volts
- ... manufactured in all sizes
- ... is described in Bulletin OK-1037.
- For a copy address The Okonite Company,

Passaic, New Jersey.



OKONITE insulated wires and cables

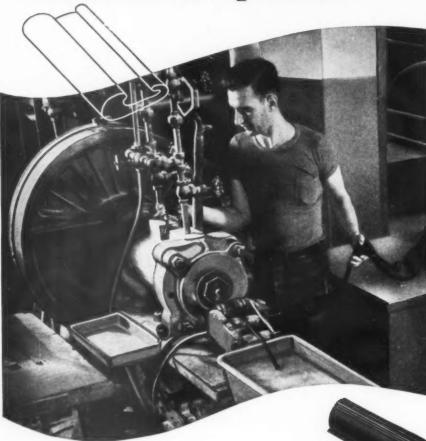
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## EXTRUDING RUBBER

is work for Specialists



Continental's specialization is based not only upon its 44 years experience, but also upon the development of specialized equipment. Rubber extrusions are becoming increasingly important as industries design their products for present and future markets. Whenever you have extruded parts to plan and purchase, why not have Continental's recommendation?

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## Rubber by CONTINENTAL

Baltimore, Md. Boston, Mass. Buffalo, N. Y. Chicago, III.

Cleveland, Ohio

Dayton, Ohio Detroit, Mich. Greensboro, N. C. Hartford, Conn. Kansas City, Mo. Los Angeles, Cal. Lutz, Fla. Memphis, Tenn. Milwaukee, Wis. New York, N. Y. Philadelphia, Pa. Pittsburgh, Pa. Rochester, N. Y. St. Louis, Mo. San Francisco, Cal. Syracuse, N. Y.

CONTINENTAL RUBBER WORKS . ERIE, PENNA., U.S.A.

#### SHEET PLASTIC BEADER



ILLUSTRATION shows "Thermobeader" for straightedge beading of cellulose acetate, ethyl cellulose, vinyl acetate, cellulose nitrate and similar thermoplastic - type sheet of .005—.020" thickness. Rate of

output in average production ranges from 500 to 1000 inches per minute, depending on type and thickness of material, it is reported. Features include: interchangeability of dies for forming nine different standard-size beads and shapes; automatic die temperature control; variable transmission for controlling machine operating speed in relation to die temperature. Additional data available. Taber Instrument Corp., 111 Goundry St., Tonawanda, N.Y.

HAMMER FEATURES ALUMINUM ALLOY TIPS TIPS of the Kant-Mar hammer are made of a precision turned aluminum alloy called "Velv-Alum", and On

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are replaceable. The material is suited to jobs in garages, machine shops, etc., yet is soft enough so as not to mar delicate surfaces on dies, etc., it is claimed. It is said to reduce the chance of eye injury due to chipping. The hammer is made in two sizes; 8 and 32 oz. in a plain model (non-replaceable tips), and the same sizes with replaceable tips. Schmidgall Products, 307-11 Cass St., Peoria 2, Ill.

#### NON-ELECTRIC PULLEY

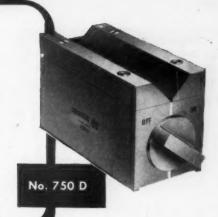


SELF-ENERGIZED magnetic pulley is adaptable to all applications requiring automatic separation of magnetic from non-magnetic materials or removal of tramp iron from materials conveyed on a belt. The unit will work through belts of rubber, canvas, leather or any other non-magnetic material, it is claimed. It is not affected by moisture, heat or cold, and its strength is permanent, according to the manufacturer. Bulletin 501-A available. Eriez Manufacturing Co., 2588 East 12th St., Erie, Pa.

(Please turn to page 182)

# PERMANENT MAGNET CHUCKS

in a full range of sizes for a wide range of jobs



One of the most useful of all roduction and toolroom aids... rown & Sharpe Permanent Maget Chucks. They save time and soney on hundreds of toolmaking, inspection and hand opera-

b. 750 D Magnetic V Block for holding iron or steel work of round or of regular shape. Capacity of V, 13/4" fam. Removable stop plate furnished trone end of block. Magnetic Block b. 760, without V, also available.

tions...also on light machine work and wet or dry grinding. For sale only in the United States of America and its Territories. Brown & Sharpe Mfg. Co., Providence 1, R. I., U. S. A.

No. 255 Magnetic Chuck for holding small or thin work in toolmaking and manufacturing or for inspection purposes. Small pieces held firmly for grinding on closely divided top surface. Working surface,  $2^7/16'' \times 5^{1}/4''$ .



.9 R Rotary Model Magnetic Chuck for grinding operations, the cuts on lathes and for other light machine operations. huck is light and compact and may be rotated without vibration reasonable spindle speeds. Designed to accommodate table amps. Working surface 9" dia.

CTANGULAR MODELS... for use on surface grinding machines d holding work for light cuts on planers, shapers and milling achines... and for other light machine operations. Chucks of taller sizes, readily portable... useful in holding work for hand ishing such as polishing, scraping and similar jobs. Working reaces from 55%" x 103%" to 121%" x 36". Removable stop plates d table clamps furnished.

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# 60 YEARS OF SERVICE to INDUSTRY

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WROUGHT WASHER MFG. CO.

2113 SOUTH BAY STREET . MILWAUKEE 7, WISCONSIN





- Less Preparation. No sandblasting or chemical rust dissolvers are necessary. Simply wirebrush to remove scale, dirt. etc. then APPLY RIGHT OVER THE REMAIN-ING RUST.
- Goes on Faster. Rust-Oleum can be applied 25% faster...covers 40% more area per gallon.
- Lasts Longer. Depending on conditions, Rust-Oleum outlasts ordinary materials two to ten times.

\$6,000,000,000 is the nation's yearly bill for rust damage to metal due to dampness, fumes, general weathering elements—an irrecoverable loss. You pay your share of this waste if your building, equipment and other property are rusting. Do something about it NOW! Use Rust-Oleum to rustproof metal surfaces.

You get lasting protection for less than 1-cent per square foot material cost, Rust-Oleum can be applied over metal already rusted — wirebrushing away loose scale is only preparation required. It penetrates rust . incorporates it in the film and forms a tough, durable, elastic coating that defies rust-producing conditions. Available in all colors and aluminum.

GET THE FACTS-Mail This Coupon TODAY!

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Please send a free copy of the new Rust-Oleum Catalog of
color selections and recommended uses.

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Сотрапу		 	 		_

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☐ Check here for name of nearest distributor.

#### FIBRE-BONDED CANVAS GLOVE



TREATED fibrebonded canvas work glove is said to have much longer life than ordinary work glove on rough jobs, and correspondingly longer life on easy jobs, resulting in savings up to 50%.

A special Sureseal treatment impregnates the glove palm so that fibre strength and stitching is reinforced. Impregnation will not crack, or peel or chip. Maker says glove will not develop a slick surface from collected grease and dirt. The Surety Rubber Co., Carrollton, Ohio.

#### FLOOR AND WOODWORK CLEANING COMPOUND

WHIZ-O-SHINE is the name of concentrated liquid cleaning compound containing pure vegetable oils.

which maker states is ideal for cleaning terrazzo, tile, rubber, linoleum and asphalt floors. It is also designed for painted and enamelled woodwork. Cupful makes full bucket of fragrant cleaning solution which leaves no film. It is produced in 5, 15 and 55 gal. containers. R. M. Hollingshead Corp., Camden, N. J.

#### MIXING BOWLS OF NEOPRENE



MIXING bowls of gypsum cements and plasters are made of neoprene. Maker says they cannot be broken or chipped and do not corrode. They can be bent into any desired shape to make pouring quick and convenient, and are readily cleaned by flexing between hands. Bowls are available in sets of five capacities—5 quarts, 1½ quarts, 1½ pints, 3½ pint, and 4 ounces. Kindt-Collins Co., 12651 Elmwood Ave., Cleveland, Ohio.

#### FITTINGS FOR USE WITH WIREMOLD 3000 RACEWAY

FITTINGS for Wiremold 3000 raceway increase its use as a heavy duty industrial plug-in-anywhere

system. The fittings constitute a series of 8 covers designed to take simple receptacles, duplex receptacles, tumbles switches, surface devices, screw type sign receptacles, surface type sign receptacles, condulet devices, and fixtures and drop cords. The covers are 45%" long, with the exception of the condulet cover which is 5". The Wiremold Co., Hartford 10, Conn.

(Please turn to page 184)

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d 10.

# avoid fastener breakage and throw-outs...

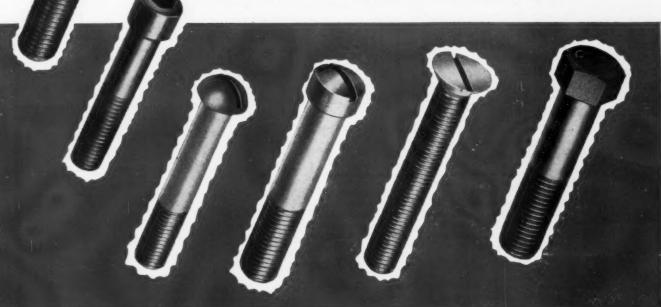
Use CLEVELAND FASTENERS

made by the

KAUFMAN DOUBLE PROCESS

Extra strength in Cleveland Fasteners is guaranteed by this well-known method which was originated in our plant.

Our manufacturing capacity is concentrated on standard cap screws—a complete range of sizes in hexagon, fillister, flat, button and socket head—high quality square head set screws, and special headed and threaded parts to your order. Write for folder explaining the Kaufman Process.



CLEVELAND
Top Quality
FASTENERS

The Cleveland Cap Screw Company

2917 EAST 79TH STREET . CLEVELAND 4, OHIO

Warehouses: Chicago and Philadelphia
Ask your Jobber for Cleveland Fasteners

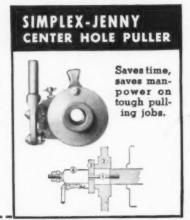
THE KAUFMAN PROCESS FOR GREATER STRENGTH AND ACCURACY



Strength, safety and versatility—you get all three when you use Simplex Hydraulic Jacks for shop and factory jobs; or when you use the Simplex-Jenny to make difficult pulling operations the work of minutes instead of hours. Every Simplex Hydraulic Jack and Jenny is pre-tested to 50% more than

rated capacity.

Use the Simplex-Jenny Center Hole Puller to get hydraulic ease of operation on such difficult jobs as pulling wheels, gears, propellors, cylinder shafts and boiler tubes. It's the "center hole" principle of the Simplex-Jenny that makes it possible to drastically shorten the time usually required for those jobs. The Simplex-Jenny also serves as a press or for conventional jack work.



USE THIS COUPON
30-DAYS FREE TRIAL

Try the Simplex Hydraulic Jack or Jenny in your own plant—FREE. Jacks are available in 3, 5, 8, 12, 20, 30, 50, and 100-ton capacities; Jennys are 30, 60, 80, or 100-ton capacities. Name the one that suits your needs and we'll send it without obligation for a 30-days free trial.

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Send illustrated bulletin	-		_Jennys
Name			
Company			
Address			
City	Zone	State	
Nearest Jobber			
Simplex		SEND	10
Jacks Hydraulic		The same of the sa	LY & CO.

#### SHOP MULE TRACTOR



NEW models of Shop Mule Tractors are designed for extra heavy duty. The Model H75 has drawbar effort of 7500 lbs., the Model H90, 9000 lbs., and the H120, 12.000 lbs., giving them a towing capacity on dry level concrete ranging from 150 to 240 tons. Pneumatic drive tires and heavy cast rear fenders assure traction in all weather. Addition of wheel sanders permits operation when sleet and snow conditions prevail. Power is furnished by International 6-clyinder engine, 68.5 hp at 2400 rpm. W. F. Hebard & Co., 336 W. 37th St., Chicago, Ill.

#### POWDERED FACING ALLOY FOR HARD FACING

METCO - WELD H is a "wire" composed of a powdered hard-facing alloy extruded with a plastic binder,

especially useful for applying smooth, uniform, relatively thin hard coatings. The binder is completely volatized. Subsequent fusing results in coating physically and chemically identical to hard facings of the same alloy applied by other methods. Maker states Metco-Weld H has excellent resistance to abrasion, and resists corrosion better than stainless steel. Bulletin 53 explains Sprayweld process in detail. Metallizing Engineering Co., Long Island City, N.Y.

#### DEEP HOLE DRILLER



MACHINE illustrated is E9HU horizontal deep hole driller, so constructed that standard two lip drills or single lip gun drills are used to advantage. Deep oil passage and lightening holes not requiring accuracy or smooth finish are drilled with two lip drills at conventional speeds and feeds. Deep holes requiring smooth finish and minimum run-out are drilled with single lip gun drills at speeds higher and feeds lower than conventional twist drills. The machine is so arranged that the functions required for the various drilling and reaming methods can be easily obtained, that is both the drill and the work can be revolved, only the work revolved or only the drill revolved. National Automatic Tool Co., Inc., Dept. 37, Richmond, Ind.

(Please turn to page 186)

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### Now You Can Get Worthington QD Sheaves at Substantial Price Reductions

Worthington's increased production of QD Sheaves — to meet industry's growing demands—has resulted in lower production costs, which we pass along to you — our customer, as a substantial price reduction in stock "A" and "B" sheave sizes. Service has been improved, too! From conveniently located stocks you can choose over 25,000 QD Sheave combinations for V-Belt drives ranging from fractional to 200 hp.

#### Strength Where It's Needed Most.

Upper sketch shows I-Beam construction in Worthington QD Driven Sheaves. Compare it with conventional design below and note how material is concentrated where strain is greatest—putting strength where strength is need-

ed most. Taper-mated, load-tested hubs and rims, full-sized pull-up bolts and I-Beam arm construction are Worthington features which make the QD Sheave the "Strongest Sheave for its weight ever made" — a plus value to sheave users.







#### Customer Preference Based on Market Research.

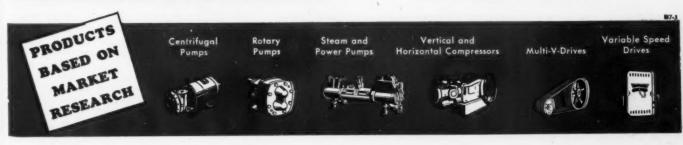
Customer preference dictated a basic change in the original QD Sheave from a combination groove to a separate "A" and a separate "B" groove — which is what you, our customer, wanted — to give you a better appearing sheave and a better fit between belt and groove. Worthington QD Sheaves are custom-built to fit the belt — an "A" belt in an "A" groove — a "B" belt in a "B" groove. Available in listed stock sizes from 3" to 22" diameters in "A" section; from 4" to 38" in "B" section.

Get the Proof. A demonstration in your own shop will convince you that only Worthington — the original QD Sheave — is Easy to Get On — Easy to Get Off — Yet Always Tight on the Shaft — proof that there's more worth in Worthington.

Contact your nearest distributor for a demonstration today. Worthington Pump and Machinery Corporation, Merchandising Div., Harrison, N.J. 36 District Offices throughout U.S.

## WORTHINGTON







# ...keeps MEN in motion

Stagnating production frequently is the result of stagnant air. You'll find daily output of your factory, office or mill benefited when you provide workers with fresh, clean, invigorating air. Moreover, you'll likely find the cost of Emerson-Electric exhaust fans repaid by improved Employee Relations. In the interest of quality production and greater plant harmony, get full information on Emerson-Electric fans at once. Survey your buildings and write direct to us or consult your local Emerson-Electric dealer to suggest the most efficient and economical Emerson-Electric exhaust equipment for your particular air-moving job.

# Move up to 16,700 C. F. M. with EMERSON-ELECTRIC BELT-DRIVE EXHAUST FANS

Powered by specially-engineered Emerson-Electric motors, these sturdy fans have an efficient type of blade, rigidly assembled and carefully balanced to minimize vibration and assure quiet operation. Fan-shaft bearings have lubricating capacity sufficient for 2,000 hours' operation. Made in 48-in., 42-in., and 36-in. sizes.





# An EMERSON-ELECTRIC FAN for EVERY Air-moving Job

Emerson-Electric Direct-Drive exhaust fans are available in five sizes from 12 to 30-in., in both ball-bearing and sleeve-bearing types. Motors are fully enclosed. Overlapping-blade assembly insures unusually quiet operation.

#### Send for FREE EXHAUST FAN PRODUCTS BULLETIN

Especially prepared as helpful guide to busy executives interested in plant improvement. Contains full product information, specifications and reference material for plant engineers. Shows typical installations in foundries, machine shops, lofts, show rooms, stores, etc. Send for your copy of catalog No. 477 today.







#### RAM TYPE MILLING MACHINE



RAM TYPE milling machine, Model No. 16, features an adjustable cutter head and movable ram which permits horizontal, vertical as well as angular milling, with standard milling cutters and conven-

ventional milling practices. By moving a single lever, the operator can start the spindle, feed and coolant or any combination thereof. The same lever is used to reverse the spindle etc. A "start and stop" switch is located on the front of the knee. Specifications include: table size 37" x 9½", table travel (power) 18"; saddle cross feed (hand) 8"; knee vertical feed (hand) 17". Van Norman Co., Springfield, Mass.

#### HIGH PRESSURE CHASSIS LUBRICATOR

SL-104 high pressure chassis lubricator is designed for automotive vehicles, industrial machinery, etc. It

machinery, etc. It is equipped with an air operated double-acting pump which builds up a 50 to 1 pressure ratio compared to the usual maximum of 40 to 1. It pumps grease on both the up and down stroke, and it is impossible for air pockets to form in the line. The lubricator can be used with 400, 100, and 25 lb. original refinery drums. It is guaranteed for one year. Industrial Machine and Supply Co., Empire Bldg., Pittsburgh 22, Pa.

#### VARIABLE SPEED TRANSMISSIONS

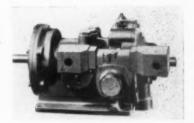
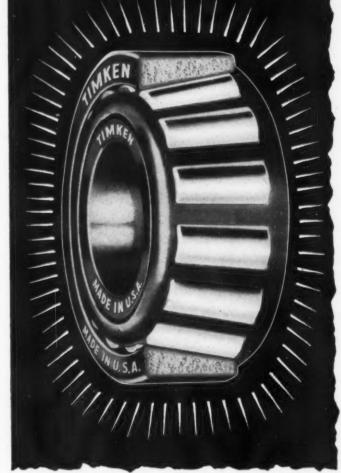


ILLUSTRATION shows Oilgear's new, smaller, lighter, speedier, reversible variable speed transmission, two way, electric three-position remote control. Maker says they are suitable for wire coating and rewinding machines, spring coiling machines, small draw benches, grinding wheel head drives, gang-saw feeds, furnace drives, etc., etc. They are available with hand screw control, hydraulic Servo-Moto lever control, and electric 3-position remote control; standard control devices can be modified to meet special operating applications. Fluid power in transmission system can be connected in series to separate fluid power motors for operating additional drives. The separate motors can be started and stopped at will of operator. The Oilgear Co., 1378 W. Bruce St., Milwaukee, Wis.

(Please turn to page 190)

Buy The
Bearings Your
Engineers Prefer

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Roller Bearings

Timken Roller Bearings are old tried and trusted friends to thousands of designing engineers in many industries. They have earned this confidence through a combination of scientific design; precision manufacture; and Timken Alloy Steel, plus more than 48 years of continuous engineering development and experience.

Timken Bearings are the universal choice for equipment of all kinds — wherever wheels and shafts turn — because they assure the performance and endurance machine manufacturers and users must have.

Every genuine Timken Bearing is positively identified by the trade-mark "TIMKEN" stamped on cup and cone. Look for it on every bearing you use. The Timken Roller Bearing Company, Canton 6, Ohio.

TIMKEN
TAPERED ROLLER BEARINGS









SPECIALTY NUTS, including cane, barrel, plier, oblang, Tri-Slot, half-round

LAMSON LOCK NUT





MILLED STUDS in a full range of

DARDELET RIVET-BOLTS with the locking throad . . . time savers for steel construction



WEATHER-TIGHT Bolts-n festeners for wood assemblies— eliminate counterboring



PHILLIPS and CLUTCH RECESSED **HEAD Machine Screws and Sheet** Metal Screws



PLACE BOLTS-for locking assemblies rigidly



"1035" SET SCREWS of hi-tensile heat-treated steel, square head or headless



"BENT" Bolts, including U Bolts, J. L. Heek and Eye Bolts



Hi-Center Saddles and extra-strength U Bolts



PIPE PLUGS, square head and headless; forged steel, heat-



LOK-THRED Studs and Pipe Plugs
--- Thread locks and seals in standard tapped holes



ROAD MACHINERY and other heavy equipment parts—high tensile and allay fasteners



COTTER PINS of steel, brass, aluminum and stainless steel



BICYCLE PARTS, from oxles and saddle bolts to chain-adjusting SCHOW'S



PLASTIC INSERTS—made to your



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"BOLTS, NUTS & SCREWS"—a compilation of important | stand technical articles on the manufacture, inspection, specifi- to fun cation and use of fasteners; order from The Lamson &

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"BOLT, NUT & RIVET STANDARDS"—a complete and up-to-date standards book on commercial fasteners. Available lions only from the American leaders. only from the American Institute of Bolt, Nut & Rivet Manufacturers, Hanna Bldg., Cleveland, Ohio. \$2.00 per copy.

TS . CARRIAGE BOLTS . MACHINE BOLTS . LAG SCREWS . WEATHER-TIGHT BOLTS . COTTER PINS . SEMS . KEY BOLTS . CHAIR and L OBLONG NUTS . DARDELET RIVET BOLTS . CLIP BOLTS . PLOW BOLTS . TIRE BOLTS . SHEET METAL SCREWS . MACHINE SCREWS . STO VATOR BOLTS . PHILLIPS SCREWS . CAP SCREWS . SET SCREWS . PIPE PLUGS . HOT PRESSED and COLD PUNCHED NUTS . SKEIN NUTS FIN HEAD BOLTS . CLUTCH HEAD SCREWS . TAIL NUTS . HEEL BOLTS . ACORN NUTS . CAPPED NUTS . SLEIGH SHOE BOLTS . STO VIS PINS . CONNECTING-ROD BOLTS and NUTS . PLACE BOLTS . MARSDEN NUTS . SELF-TAPPING SCREWS . FITTING-UP BOLTS . U BOLTS

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BOLTS

Lamson Milled Studs are a great a more than accurately made threaded fasteners. They precision engineered parts—manufactured on the st modern equipment and tolerance-controlled for e and speed in assembly operations.

reads and shanks are true and concentric; which ans that Lamson Studs turn straight in tapped holes stand straight and true to receive other parts. There specifi- to fumbling or forcing to assemble mated parts.

ason Milled Studs are available with standard length eads or can be made to order with any required cial thread length. We are also equipped to manud up-to the precision aircraft-quality studs, having made vailable lions of them within tolerances of two ten-thoughthan of an inch.

### LAMSON LOK-THRED STUD

This new patented "super" stud fits into standard tapped holes, yet it locks and seals. For complete technical information on the Lamson Lok-Thred Stud, send for our free illustrated LOK-THRED booklet.

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URNITURE BOLTS . SEMI-FINISHED NUTS . LAMSON LOCK OLTS . ELEVATOR BOLTS . STOVE RODS . TRACTOR BOLTS

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# TIME

**PROVES** 

Galvanized (ZINC-COATED) Sheets
Stay Stronger Longer



34 YEARS... Erected in 1913, and covered with heavy-gauge galvanized sheets, this Tennessee concentrating plant of the A/Z Company, is still in excellent condition after more than 3 decades of service. Painted with Gray Metallic Zinc Paint in 1932.



In building for the future, look to the past for proof of a building material's strength . . . durability . . . service. With galvanized (zinc-coated) roofing and siding, you get the strength of steel . . . the rust protection of Zinc. So for low-cost, long-time service, choose the building material that's proved by TIME itself . . . galvanized sheets. Send coupon for information about Zinc and how it can help keep your buildings and equipment stronger longer.



This "Seal of Quality" is your guide to economy in buying galvanized sheets. It means they carry at least 2 oz. of Zinc per sq. ft.

#### AMERICAN ZINC INSTITUTE

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#### FREE BOOKLETS!

Send me without cost or obligation the illustrated booklets I have checked.

- Repair Manual on Galvanized Roofing and Siding
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- ☐ Use of Metallic Zinc Paint to Protect Metal Surfaces

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Address			

Town State\_\_\_\_

4-WAY AIR VALVE



NEW 4-way air valve, known as the "Air-Miser", has a by-pass port in the bronze disc which allows half of the compressed air used in the power stroke of a double acting air cylinder to be used to return the piston. Utilizing the exhausted air reduces the load and volume consumed from the air compressor by 50%, it is claimed. The valve has an auxiliary port that can be used should more air be needed to return the piston. This gives the operator a conventional 4-way valve plus the by-pass feature. It also has a neutral position which is used when the cylinder is idle. Literature available. Knox Industries, Inc., 5542 N. Main St., Lexington, Mich.

#### FOOT-POWER HYDRAULIC VISE



ELIMINATION of manual cranking in illustrated foot-power hydraulic vise enables operator to keep both hands on work at all times. One foot pedal tightens, the other releases the jaws. It has a capacity of 2 tons; overall height of 3"; depth of jaws 2"; maximum jaw opening of 2½"; overall length of 15". Vise has slotted lugs for milling machine, drill press or bench. A block or stop of any size can be inserted in back of movable jaws. Jaw plates run full 2" deep. Munton Manufacturing Co., Franklin Park, Ill.



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Standout values—Our quick drying towels are strong when wet ...free from lint and fuzz...and gentle to the skin. Our tissues are precision made for all types of dispensers. Write for samples, today!



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28 low-cost materials affording

a broad choice of densities, degrees of compressibility, binders,

and tensile strength.

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# Reduce Gasket Costs

#### ARMSTRONG'S SYNTHETIC RUBBERS

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#### Choose from 5 basic types of standardized materials

Made-to-order gasket compounds are seldom necessary when you rely on Armstrong's standardized resilient sealing materials. Five basic types, available in 70 different formulations, offer a planned range of properties designed to meet almost any gasketing specification.

All Armstrong materials are performance tested. Each is built to do a specific job. Choose the gasket you need from this wide-range line of standardized materials. You'll save money and avoid costly production delays.

#### SEND FOR FREE BOOKLET

Write for new, 20-page 1947 edition of "Armstrong's Gasket and Sealing Materials." It includes specification data on more than 40 Armstrong's resilient sealing materials and also helpful hints on their proper application.

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Meet practically every need with this powerful, fully portable, battery operated Public Address System. Excellent sound amplification. Unit weighs only 12 pounds. Can be used anywhere—walking, standing, riding. The Sittronic Company, Point Bldg., Pgh., Pa.



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### FIBRE DRUM PACKAGING PROTECTS DELICATE PRODUCTS

A twin fibre drum packaging development known as "Vibra-Safe" that protects fragile and expensive tubes for television cameras from the shocks, jars and vibrations of normal rail transportation and handling has been developed by the Farnsworth Television and Radio Corporation of Fort Wayne, Indiana, and The Container Company Division of Continental Can Company, Van Wert, Ohio.

Although considerable research and experimentation went into this development, the packaging procedure is relatively simple. First the electronic or television tube is wrapped in several thicknesses of Kimpak wadding, a standard material made by the Kimberly-Clark Corporation. Then this snow-white bundle is packed in a slip cover drum known as Fiberpak. Next the Fiberpak is rolled in



Some of the delicate television and electronic tubes for which the special fibre drum is used.

several thicknesses of single-faced corrugated paperboard and inserted in a larger Fiberpak. A coiled strip of single-faced corrugated paperboard in the bottom of the larger drum and another in the top provides additional shock absorbing protection. The cover is easily sealed with 3" kraft tape.

The twin Fiberpaks resist penetration or excessive pressures and impacts. The space between the outer and inner drums diminishes the force of any heavy thrust. And finally the soft wadding deadens the jarring and vibrations so that the tiny filaments are unharmed by rough handling in domestic or export transportation.

According to R. F. Young, manager of tube production at the Farnsworth factory, all the following articles have been shipped in Continental twin drums without a single packaging failure: color image dissector tubes, black and white dissector tubes, electron multiplier tubes, and various other special tubes. Many shipments travel as far as London, England, as well as to distant cities in the United States.

Tubes for television cameras are more costly than tubes for receiving sets; prices for single tubes ranging from \$100 up to \$3,000 are not uncommon. Furthermore, the tubes are so delicate that packaging requirements to prevent visual breakage of thin glass or other materials as provided in the Official Express Classification, and in Rule 41 of the Consoli-

(Please turn to page 194)

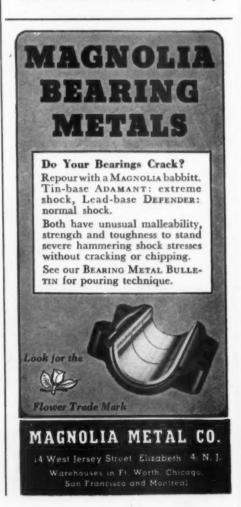


# In Volume Production

These 4-cycle, air-cooled gasoline engines are thoroughly service-proved in many applications. Light weight, compact design, and wide power range mean ready adaptability to many types of equipment and powering problems. Backed by 28 years of engine building experience, including manufacture of the famous Kinner aircraft engines.



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B&L advanced production methods go to the heart of your machining problems by providing Cold Finished Alloy Bars, specially developed for your requirements:—

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(2) Annealed by controlled furnace treatments to suitable structure for your product specifications.

This helps to insure the desired physical characteristics in the finished parts, and contributes to uniformity in machining and dependability in service.

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Not drilled — broached — machined. Holo-Krome Fibro Forged Flat Head Socket Cap Screws are made by an exclusive Holo-Krome patented method whereby the Head and Body in fact, all portions of the screw (threads excepted, Standard Class 3 fit) are Completely Cold Forged. Fibro Forged Screws inherently have the completely continuous fibrous structure that results in increased strength. Specify "Holo-Krome" for Guaranteed Unfailing Performance.



Your Holo-Krome Distributor Is Ready To Serve You From His Warehouse Stock



THE HOLO-KROME SCREW CORP., HARTFORD 10, CONN., U. S. A.

HOLO-KROME

fibro forged SOCKET SCREWS

(Continued from page 192)

dated Freight Classification, for "Articles in Glass," are far from adequate. In addition, the tubes vary considerably in shape and size so that ordinary die-cut paper-board fittings and bracers are neither practicable nor adequate to satisfy the vital super-safe cushioning requirement.

The Vibra-Safe Fiberpaks, which represent an entirely new packaging approach, have solved these problems. Vibra-Safes are also being used for shipping original models of new designs valued as high as \$10,000 or more. Such deliveries, however, usually are accompanied by a Farnsworth representative.

#### # # # STABILIZED NYLON ROPE

The Columbian Rope Company, Auburn, N. Y., announces an improved Nylon rope styled stabilized nylon rope. In the "stabilizing" process the yarns and strands of nylon actually shape to conform to the lay of the rope. As evidenced by the accompanying illustration there is



Unstabilized Nylon

Stabilized Columbian Nylon

no fluffing, fraying or untwisting of yarns—no unlaying of strands when the rope is cut. This makes for easier handling, splicing, whipping or seizing, and easier knotting, and obviates loss of rope through an untwisting action.

Nylon rope is resistant to many factors that shorten rope life. Abrasion, water absorption, marine rot and decay are minimized. Nylon stays flexible, wet or dry, and is said to absorb so little water that it can be stored immediately. It is also claimed that the rope does not increase in weight appreciably when wet.

# SUCTION PUMP USED TO UNLOAD FISH

One million fish can be unloaded from a boat in less than two hours by means of a new vacuum hose developed by United States Rubber Company that sucks up the fish and sends them speeding to storage bins 1,500 feet away.

The new unloading system is being used by the Consolidated Fisheries here to handle menhaden fish now arriving at the rate of more than 8,000 tons a month

The fish are drawn into the hose under high vacuum by a large pump located on the dock. Fishermen arriving with this year's record-breaking catch of menhaden fish report that the new suction process reduces their unloading time 80 per cent.

(Please turn to page 196)

TRUMBULL (T) ELECTRIC

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II LITTLE SHORT OF MAGIC!

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> OTHER FACTORIES AT NORWOOD, OHIO . SAN FRANCISCO . SEATTLE . NORTH HOLLYWOOD



In VALDURA Asphalt Aluminum Paint, 99.5% pure
Gilsonite Asphalt unites with aluminum leaf paste to compound a metallic finish of incomparable durability. It affords coat-of-metal protection to all surfaces — wood, metal, canvas, concrete, or fabric — rendering them waterproof and resistant to rust, rot and corrosion. VALDURA Asphalt Aluminum Paint also remains silver-bright and impenetrable despite the destructive action of sun, salt spray, fumes, smoke and heat up to 450° F. It has a record of outstanding, economical service in every type of industry. This armor-plate paint may be used as a primer, as well as the finish coat — providing complete, one-coat coverage whether applied by spray, brush, or dip. Wherever absolute protection is needed, VALDURA Asphalt Aluminum Paint will do the job. See your Valdura Dealer.

AMERICAN-MARIETTA COMPANY, 43 E. Ohio St., Chicago, III.

### DRAVO DEVELOPS WEATHERTIGHT SHIPPING CONTAINER

To facilitate loading and unloading operations and minimize breakage and pilferage of merchandise shipped by ocean-going and lake vessels, river barges, railroad cars and some motor freight carriers, Dravo Corporation, Pittsburgh, Pa., has developed a 277-cu. ft. welded steel, interlocking weathertight shipping container designed to carry loads up to 12,000 lbs.

In a trial shipment of 12 containers of this type between an east coast port and Porto Rico, material handling costs were said to be reduced approximately 70% of the cost when cargo is handled by customary methods. Tiering expense was cut about 90%; dock watching charges and checking and clerking costs were eliminated, it is claimed.



New weathertight containers can be tiered to conserve space

The standard Dravo shipping container is 7 ft. 9 in. long, 6 ft. 5 in. wide and 6 ft. 10½ in. high. It weighs approximately 1650 lbs. and, with a design load up to 12,000 lbs., constitutes a gross weight that can be handled by most ship and pier cranes.

#### NEW LINE OF RECORDING THERMOMETERS AND GAUGES

A new line of recording thermometers and recording gauges known as the Series 500 line of recorders has been announced by the Bristol Company, Waterbury 91, Conn. The instruments operate on the same basic principles as those used in recording thermometers and gauges built by the company for many years, but are housed in a newly-developed modern case and incorporate many design improvements.

The case is designed so it can be mounted either on a wall, front of panel, or flush on a panel. Other case features include a heavy inlaid sponge-rubber door gasket, flush roll-type door handle, and non-projecting door hinges. The mounting block, which holds the external connections to the instrument, is removable. Pen arms are pivoted on stainless steel journals with the pen arm shaft supported at both ends in a rigid one-piece mounting.

Series 500 recording thermometers and gauges are furnished in 8" and 12" sizes and a variety of ranges.

(Please turn to page 200)

Good Products Start
With Good Steel

about revolutionary improvements in the appearance of today's manufactured products. But, back of their modern looks, the good old-fashioned qualities of durability and strength are still essential. Many manufacturers have learned that Weirton cold-rolled sheets possess those qualities in full measure, along with exceptional drawing and forming qualities that speed production and reduce tool expense and scrap losses.

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Division of NATIONAL STEEL CORPORATION Executive Offices, Pittsburgh, Pa.

### "Give us Airco's new Elite

aluminum brazing flux and #716 wire

every time...they do a swell job ..."

says Mr. Walter O. Schleif, Plant Superintendent,
Bell Specialty Manufacturing Company, Inc., Brooklyn, New York

Used in the manufacture of Solar aluminum furniture at Bell Specialty, Airco Elite Aluminum Brazing Flux and #716 Brazing Wire have more than proved their ability to meet the demand for a high grade, economical brazing alloy, with a satisfactory low melting point. They give excellent results in the fabrication of a wide variety of aluminum products—from cooking utensils and electrical appliances to metal furniture, window frames and other extruded aluminum shapes.

For further information about these two new Airco products, write for a free copy of "Torch Brazing Aluminum"—a new article now being printed. Address: Dept. PR-6140 Air Reduction, 60 East 42nd Street, New York 17, N. Y. In Texas: Magnolia Airco Gas Products Company, Houston 1, Texas. Represented Internationally by Airco Export Corporation.



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# **G-E CIRCLINE BALLASTS**

Prices on General Electric's famous Circline ballasts have been reduced as much as 20 per cent. The table below shows where these reductions have been made and their extent. Stepped up production and more efficient manufacturing tools have made these reductions possible.

Ballasts are available for both the 12-inch, 32-watt and the 8½-inch, 22-watt Circline lamps. They are designed in uncorrected or high-power-factor ratings for single lamps, and for high-power-factor Tulamp operation. Ballasts are made in rectangular design, and in the disk-shape design which lends itself to mounting in the base of a lamp or to concealment in shallow wall or ceiling fixtures. Bulletin GEA-3293 gives full details, wiring diagrams and dimensions. Apparatus Department, General Electric Company, Schenectady 5, N. Y.

Lamp Lamp Ballast Cat. No.			Туре	Approx Power Factor	OLD List Price Each	NEW List Price Each
12"	32	59G440	Single-lamp rectangular case	50	\$2.75	\$2.50
12"	32	59G420	Single-lamp circular case	50	3.25	2.50
12"	32	59G425	Single-lamp circular case	90	6.00	4.75
12"-12"	32-32	59G442	Tulamp rectangular case	95		6.00
12"-12"	32-32	59G424	Tulamp circular case	95	7.50	6.00
12"- 81/4"	32-22	59G443	Tulamp rectangular case	95	*	6.00
12"- 81/4"	32-22	59G429	Tulamp circular case	95	7.00	6.00
81/4"	22	59G419	Single-lamp rectangular case	50	.90	.90
81/4"	22	59G428	Single-lamp rectangular case	90	3.50	3.50

<sup>\*</sup> These are new designs, not previously listed.



# TWO NEW CIRCLINE BALLASTS, TOO

General Electric announces two new Tulamp ballasts for Circline lamps. Both are of conventional design and will find the greatest use in ceiling fixtures and other general lighting applications. Catalog No. 59G442 operates two 12-inch, 32-watt Circline lamps; Catalog No. 59G443 operates one 8½-inch, 22-watt lamp and one 12-inch, 32-watt lamp.





ELECTRIC

#### LEATHER BELTING



SCHIEREN FLAT BELTING — specially tanned to transmit more power — last longer. Available in all sizes to meet all regular and special requirements of service.



SCHIEREN LEATHER V-BELTING — Supplied in 100 foot rolls in A, B, C, and D sections. Full grain side walls for extra grip. You can make any desired length at a moment's notice. Also made in smaller sizes for fractional horse-power drives.

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Schieren packings are accurately made from specially tanned packing leather. For Hydraulic, Pneumatic, High Pressure and Low Pressure and high temperature service.

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Made by Schieren to fit your individual requirements, from leather that suits the purpose best. All types, straps, pickers, aprons, discs, clutches, etc.

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Tanners and Manufacturers Since 1868

## "Service Packaging" Introduced By Behr-Manning



Showing sleeve packaging and edge printing, disc products in new standard and minimum packages, 50-yard rolls in smaller packages, and Spirabands, Spirapoints, Spirabelts, Spiracords, slotted disc and pencils, in Behr-Manning's Service-Packaging.

Purchasing departments and users of coated abrasives will find of especial interest Behr-Manning's new functionally-planned customer-built repackaging plan which has been aptly styled "Service Packaging." The main motives around which Service Packaging was developed are convenience and economy in the buying, selling, handling and use of coated abrasives.

The system is described by Behr-Manning as ". . a planned, 'tailored' method of packaging coated abrasives in such proper quantities, weights, and invoice values and in such readily identified containers or wrappers as to best serve the functional needs and habits of the industrial consumer and user alike."

In the development of the system, thousands of invoices were studied by product, trade class and end use. Distributor records were similarly checked. Industrial plants and distributors were interviewed and the new packaging is based on "what happens after the product leaves the factory."

One of the revolutionary changes lies in the new packaging of sheet goods where, heretofore, ordering, pricing, billing, inventorying and all such operations were complicated by the 24-sheet quire and the 480-sheet ream counts. Service Packaging eliminates all confusion by inaugurating decimal quantity packaging. Henceforth, these quantities will all be by the hundred, or part thereof.

Another correction lies in the packaging of the quire itself. Service Packaging has adopted neat, sturdy chip-board sleeves in which are packed 25, 50 or 100 sheets each, depending upon bulk. Ten of such sleeves are now packed neatly in sturdy, corrugated containers whose weight and bulk permit easy handling. In addition to correcting the curling, dogearing and shuffling of sheet goods, these sleeves also permit another reform—end print of product, grit number, size and quantity, in identifying colors which are readily legible when shelf stacked. Errors and confusion are obviated by the ready and positive identification.

Another extremely important contribution of Service Packaging is foolproof product identification by color labels. Service Packaging utilizes seven basic label colors to identify its major product groups: Green for Adalox; red for Garnet, blue for Durite; brown for Metalite;

(Please turn to page 202)



order. If your local Chase warehouse does not have the items you want in stock, they'll make every effort to get them for you from one that has.

Chase Brass & Copper Co. Incorporated, Waterbury 91, Conn. A Subsidiary of Kennecott Copper Corporation.

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THIS IS THE CHASE NETWORK ... handiest way to buy brass

ALBANY: ATLANTA: BALTIMORE BOSTON CHICAGO CINCINNATI CLEVELAND DETROIT HOUSTON; INDIANAPOLIS KANSAS CITY, MO. LOS ANGELES MILWAUKEE MINNEAPOLIS NEWARK NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH PROVIDENCE ROCHESTER; SAN FRANCISCO SEATTLE ST. LOUIS WASHINGTON; (Hindicotes Soles Office Only)



# A CHAMPION Light Rule The New, Simplified Lighting Calculator

Write today, on your company letterhead, and the makers of CHAMPION Quality Fluorescent and *Incandescent* Lamps will send you one of these handy, useful, pocket Light Rules.

Completely new and different, the Champion Light Rule gives you foot candles, lumens per lamp or fixture, area per lamp or fixture at a single setting of the slide. It's the only Lighting Calculator that applies to any type of lamp or fixture without reference to catalog numbers.

You'll have to see and try out this Light Rule to appreciate its practical utility. It's yours for the asking when requested on your company letterhead. Write Department H.





(Continued from page 200)

orange for Flint; black for Emery; and violet with stripes for Resinized Speed-Grits.

Within these colors the type of adhesive is further distinguished by the use of a solid tint block or all-over pattern which may be of triangles or diagonal stripes. For example, solid blue indicates glue bond Durite Products; blue with a triangular pattern indicates Speed-Wet Waterproof Durite products, and so on. Thus each master package and each component package is marked with a characteristic colored label which stockroom people, order clerks and inventory clerks can recognize at a distance.

Package quantities were revised in the light of industrial buying habits, to arrive at the ideal quantity per standard or master package, and the corresponding quantities per minimum or component package, as to weight, bulk, invoice value, etc. With few exceptions, standard package quantities and minimum package quantities have either been raised or lowered to suit the demonstrated desires of industrial users.

To assist in distinguishing Behr-Manning products on shipping and receiving platforms, in stockrooms and tool cribs, a distinctive overall printed external wrapper has been developed featuring the combined trade marks of the Behr-Manning "bear and triangle" along with the Norton Abrasives logotype.

Other changes include the placing of belt nests in minimum package cartons instead of banding them; package quantities for paper and cloth belts have been standardized, and even the type face used on the product labels has been changed to a gothic type for much stronger legibility.

#### SAE GROUP DEVELOPING NEW ENGINEERING DATA ON COLD-DRAWN STEELS

Preparation of standard specifications for cold-drawn steels has been undertaken by a new Division, XVII, Cold-Drawn Steels, of the SAE's Iron & Steel Technical Committee. The project is viewed as a step toward wider use of these basic materials in the automotive industries with consequent savings in time and production costs and betterment of such parts as studs, bolts, shafts, pinions, axle tubes, frame supports, and shackle pins.

Initial work of the Division, comparative testing of automobile propeller shafts made from 125,000 psi cold-drawn, cold-drawn stress-relieved, and heattreated steels, is designed to establish physical properties and to suggest potential applications.

The tests further are intended to substantiate present beliefs that a wide range of physical properties of steel can be developed by cold-working which, accelerating machining operations by two to six times those of heat-treated steel and drastically curbing losses in the process, afford substantial savings in production

(Please turn to page 204)



Prevent Lubricant Leakage-

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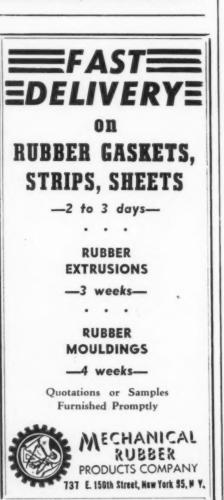
L&S BEARING

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OKLAHOMA CITY

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manufacturers.



(Continued from page 202)

time and costs. Data will be sought on retention of impact strength, relieving trapped stresses, and relative shear, all in comparison with hot-rolled steel.

The project is an outgrowth of a wartime recommendation by Army Ordnance that the Society of Automotive Engineers sponsor studies seeking to develop better understanding of the engineering characteristics of cold-drawn steels as basic materials on the theory that they might be used advantageously by Ordnance and by industry.

Chairman of the new Division is Howard M. Smith, of Wyckoff Steel Co., Ambridge, Pa.

#### FORK TRUCK TURNS "BLIND" BASEMENT INTO USEFUL WAREHOUSE

When loss of lease put Builders Products, Minneapolis dealer, out of their warehouse and the only storage space available was a basement lacking elevator facilities, Homer Elliott, president, solved the crucial problem by utilizing the lift mechanism of a Clark fork truck as an elevator.



Lift mechanism of the Clark Fork truck serves as the "elevator"

The only alteration required was to contruct a combination receiving and shipping dock opening on an elevator well, plus an arrangement with suppliers for complete palletization of roofing and similar heavy materials into unit loads averaging 1600 to 1700 lbs. of weight.

When a palletized load of roofing material, for example, is delivered at the dock, the truck driver uses a hand-operated pallet jack to unload the palletized units and spot them on the building side of the dock. The fork truck operating in the basement then picks up each pallet unit from the edge of the dock, backs off far enough for clearance, lowers the load to carrying position and takes it to storage where loads are tiered to ceiling height. An equal number of empty pallets

(Please turn to page 206)

# 4 ways to solve a lamp problem



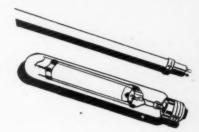
JOHN R. is a production manager in a bus body plant. He's got to increase output—and the finishing department is one of the bottlenecks. Problem: where to get a quick, dependable source of drying heat that can be easily tailor-made to his present production line?

SOLUTION: Get in touch with a recognized infra-red oven builder, John. He'll make the equipment you need. And be sure to have him equip your ovens with G-E industrial infra-red lamps. General Electric makes a full line—from 125 to 1000 watts—so you can get exactly the right heat for your job.



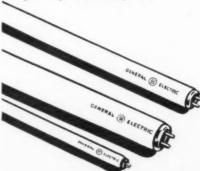
2 STANLEY McD. is a plant superintendent who's worried about the lighting in his company's foundry, a big high-bay shop. He wants to double the light on working areas—but he doesn't want to add to the present number of fixtures because maintenance is difficult.

SOLUTION: G-E mercury lamps are right up your alley, Stanley. They're ideal where high mounting height is involved, because they provide a concentrated light source—only a few fixtures are needed to produce plenty of light. Better ask your G-E Lamp supplier about that 3000-watt lamp!



FRED K. is a manufacturer whose plant lighting is inadequate, out-of-date. He wants modern lighting in shops and offices to boost morale, cut accidents, improve workmanship. The question is—how to get more light—and get it economically.

Manage over to your dilemma, Fred, is a change-over to General Electric fluorescent lamps, scientifically installed in the proper fixtures. Employees like the soft, cool light. It makes work easier. And G-E fluorescent efficiency is easy on the budget!





MISS BETTY JANE L. works for an industrial purchasing agent who buys lamps for every department of the company. His pet peeve: he hates to dicker with a dozen different suppliers to get the lamps he needs.

Then remind the boss he can buy every lamp he needs from one source—because General Electric makes 'em'all—from standard G-E filament lamps to special lamps for every use. And he can be sure of quality, because General Electric Lamp research is constantly at work to make G-E lamps Stay Brighter Longer!





Whatever lamps you need ...G-E makes 'em all

G-E LAMPS
GENERAL & ELECTRIC



Safety—Kex Wiping Towels have no uneven, ragged edging that can catch onto and damage machinery, or cause accidents. They are unlike cast-offs that have served other purposes or their usefulness. A Kex towel is compact and adapts itself to the hand. Their smooth textured surfaces and finishes are important safety factors.

IPING TOWELS are SAFE!

**Hygiene**—Kex Wiping Towels are thoroughly clean—made that way by a special high heat process, delivered fresh, on regular schedules, and in required amounts.

**Economy**—Kex Wiping Towels are rented. Nothing to buy. No expensive inventory. Just a low monthly rental. The first month should show you an appreciable saving on wiping costs.

**Softness**—You can use KEX Wiping Towels on the most delicate polished surface. There isn't a hard seam, button or bit of hidden abrasive to scratch or mar.

**Usable Space**—Big, tough and uniform in size, Kex Wiping Towels can be used right to their very edges.

For complete information, see classified section of your Telephone Directory for nearest Kex distributor, or write Kex National Service, 295 Fifth Avenue, New York 16, N.Y.



(Continued from page 204)

is then turned over to the highway truck driver as his return load. The whole cycle, from arrival of the highway truck to stored material and delivery of empty pallets, requires only 15 minutes.

Here, indeed, is an ingenious use of a versatile machine, to turn a seemingly insuperable difficulty to important economic advantage.

# DOW ANNOUNCES NEW CORROSION RESISTANT PIPE

Announcement of the development of a new type of corrosion resistant pipe and fittings was made by the plastics division of The Dow Chemical Company, Midland, Mich. The company will fabricate the new pipe at its Midland plant.



These elbows are Saran-lined

The product, Saran-lined steel pipe designed to convey corrosive liquids, combines the desirable features of steel pipe—rigidity and pressure strength—with Saran's extreme resistance to chemicals.

Main use of the pipe is in manufacturing chemicals, and in plants such as pulp, paper and textile; metal treating and metal plating, where manufacturing methods necessitate handling highly corrosive chemicals, particularly acids.



4-inch pipe cut at angle to show Saran lining

Saran-lined steel pipe is resistant to a very wide range of chemicals, oils and solvents. It will satisfactorily carry corrosive sulphuric, hydrochloric, nitric and phosphoric acids. The working temperature of the pipe, important to chemical engineers, ranges from 0° to 190°F. depending upon service conditions.

Pipe in maximum lengths of 10 feet and in sizes from 1 to 4 inches will be manufactured. Fittings, also Saran-lined, include elbows and tees, companion and

(Please turn to page 208)

# thread checking / time and costs /

(Polyson)

Only two instruments are required in many plants to solve external thread checking problems—Sheffield's new Adjustable Leadchek and the Sheffield Visual

Write for detailed information on these instruments—and for other thread gages not illustrated.

Gage with thread checking accessories. Checking is quick, ac-

curate and inexpensive.

NEW ADJUSTABLE LEAD-CHEK for range of 4½ to 60 threads per inch and for work up to 2" in diameter, equipped with a "tenth" dial indicator for production use or with an "Electrigage" for the toolroom where tolerances are as close as .0001". Writefor Inst. No. 27.

VISUAL GAGE with thread checking attachment for three wire checking of PITCH DIAMETER. Write for VG-500-45.

SINE BLOCK used with Visual Gage for checking MAJOR DIAMETER, PITCH DIAMETER and TAPER of tapered pipe threads up to 3" in diameter. Write for VG No. 4.

VISUAL GAGE with Ball Point Accessory for a rapid 2-point check of PITCH DIAMETER of parts up to 1" nominal diameter and with an accuracy comparable to the three wire method. Parts up to 2" can be handled with larger accessory. Write for VG No. 2.

THREADCHEK for the rapid inspection of LEAD, PITCH DIAMETER, THREAD ANGLE, ROUNDNESS, TAPER and STRAIGHTNESS, especially for studs, bolts and other threaded elements produced in large volume. Write for Inst. No. 10.

2

Speed with accuracy in production



Chek with SHEFFIELD on thread inspection equipment



Sheffield's principal products include Gages, Measuring Instruments, Machine Tools, Threading Tools and Contract Services. Standard Gages shipped within 24 hours.

# A name famous in the metalworking industry

SCREW... Known wherever fastening devices are used, for excellence and uniformity in Wood Screws, Sheet Metal Screws, Machine Screws, Stove Bolts — both CORBIN-PHILLIPS and CORBIN-Slotted — also Nuts, Drive Screws, Set Screws, Escutcheon Pins... Chain.

SCREW MACHINE SPECIAL PRODUCTS MILLED FROM BAR

Known throughout the metalworking industry as one of the largest producers of special products milled from bar or cold-headed blanks. In over 200,000 square feet of floor space, thousands of machines permit every primary and secondary operation needed to assure full compliance with specifications, plus rapid and economical production.

CORBIN equipment includes hundreds of single- and multiple-spindle automatics . . . batteries of grinders for centerless, cylindrical, internal and thread grinding . . . solid and opendie headers . . . lathes, milling and drilling equipment . . . departments specializing in precision tolled thread . . . heat-treating, plating, polishing . . . all subjected to step-by-step rigid inspection that promotes acceptance and speeds production for you.

You know CORBIN... you know CORBIN-SCREW... it will pay you to know CORBIN SCREW MACHINE SPECIAL PRODUCTS for the manufacture of small parts, inspected and ready to go into your assemblies.

CORBIN SCREW DIVISION
The American Hardware Corp.
NEW BRITAIN
CONNECTICUT

SCREW MACHINE Special Products

(Continued from page 206)

reducing flanges and gaskets. The latter are made of specially compounded Saran to assure maximum chemical resistance at joints.

Field assembly presents no undue problems. Conventional power tools may be used for cutting and threading and assembly of joints is very similar to that of standard steel piping, the company reports.

The price of Saran-lined pipe is said to compare favorably with other chemical piping.

# # # # # FLOATING-HUB CASTERS FOR INDUSTRIAL EQUIPMENT

Floating-Hub casters developed durthe war by the Bassick Company of Bridgeport, Conn., for the shockless movement of portable equipment, are now being embodied in the construction of many kinds of casters and wheels for peacetime industrial use. The accompanying illustration shows what is termed the airport wheel which includes a Floating-Hub with a specially designed tire used



Movement of Equipment Speeded up to 25 miles per hour

by several air lines on cargo trucks, commissary carts and other units. It is said that the elimination of shocks, bouncing and shimmy has made it possible to speed up the movement of equipment from 15 miles per hour to 25 miles per hour. At the same time breakage of casters has been reduced 75%, and the smooth riding of the various types of carts minimizes damage to the cargo being carried.

The hub is constructed with a specially designed coiled steel spring which provides resiliency between the rim of a wheel and the axle. The spring will carry the load off center and level the axle's line of travel. The wheel stays in contact with ground rather than bouncing up and down and, rides over bumps without lifting the load. The new casters and wheels are being made with and without tire mountings.

# PUNCH "SHOOTS" HOLES

Ford Motor Company railroad workers who tend the 135 miles of track in the Rouge plant, Dearborn, Mich., now are equipped with a "cannon" that will shoot holes in steel rails.

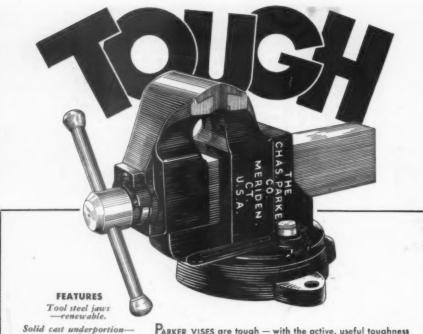
Called a velocity powerrail punch by the Mine Safety Appliance Company which manufactures it, this 45-pound,

(Please turn to page 210)

by ny nd,



THE ARABOL MANUFACTURING CO. Executive Offices: 110 East 42nd St., New York 17, N.Y. CHICAGO—54th Avenue & 18th Street • SAN FRANCISCO—30 Sterling Street • Branches in Principal Cities • Factories in Brooklyn, Cicero, San Francisco



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trial aprons manufactured.

(Continued from page 208)

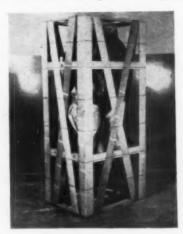
portable industrial firearm is loaded like an old smooth bore rifle. The cartridge is placed behind a punch of desired diameter, the firing pin is attached and the "cannon" fired by a tap with a light

The explosive force drives the punch through the steel rail, leaving a clean, perfectly round hole. This eliminates the time-consuming job of drilling holes in rails when laying track.

Firing a cartridge slightly larger than .45 caliber, the punch is capable of shooting holes up to one and one-half inches in diameter in three-quarter inch steel. It was used extensively by the Navy in the last war in damage control.

#### BEFORE AND AFTER CYCLE CRATING

Accompanying illustrations are of "before" and "after" cycle crates, portraying the replacement of crate previously used, with designed-for-the-product wirebound crate developed by engineers of the General Box Co., Chicago. The engineers removed the front wheel of the Simplex Servi-Cycle, and placed it beside the rear wheel; the handle bars were detached and fastened parallel with the cycle. The back tire was taken off the rim and a bolt was placed through the



Compare this crate with the new one illustrated below



The new crate provides for a safer and more rigid shipment

valve opening to secure the cycle to the base, and the front of the cycle was bolted to the crate base with a packing piece set across the frame.

The new crate can be stacked either on side or on end; it provides for safer and more rigid shipment of the product, and is more compact and better looking.

(Please turn to page 212)

### A BUYING GUIDE FOR ABRASIVES

POINT No. 9

## COMPLETE LINE OF ABRASIVES



The Carborundum Company makes the only complete line of abrasives produced under one trade mark.

With industrial techniques utilizing a wider variety of different type abrasives, it is only logical that users turn to The Carborundum Company as the one primary source for all abrasive needs. Product quality is known and highly regarded. Specialized service on all abrasive problems and applications is covered by experienced representatives who are free to recommend the best abrasive products for your requirements. Satisfaction is assured. Of even more importance to many, responsibility is definitely fixed and undivided. For reasons such as these, there is an increasing preference for products by CARBORUNDUM. The Carborundum Company, Niagara Falls, New York.

A Good Rule for Good Grinding ... CALL IN

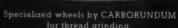
# CARBORUNDUM

BONDED ABRASIVES

COATED ABRASIVES

ABRASIVE GRAINS AND FINISHING COMPOUNDS



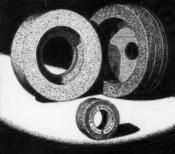




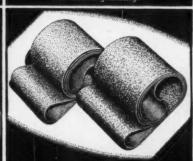
Diamond wheels to meet stiffer technical needs.



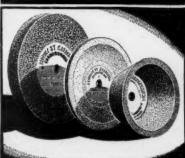
"Carborundum" is a registered trademark which indicates manufacture by The Carborundum Company



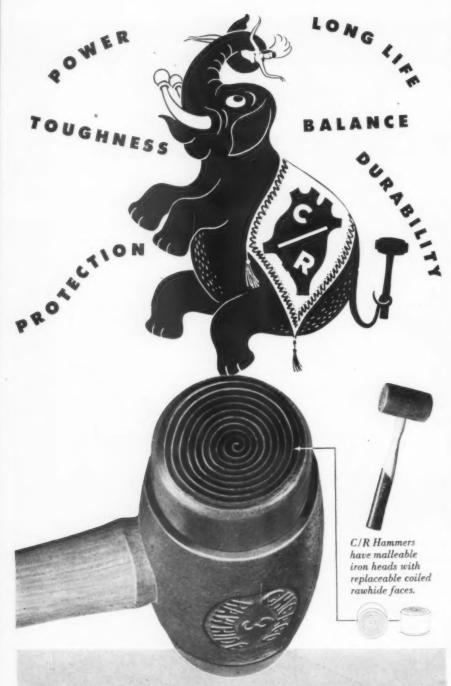
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A coated abrasive for every



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everything you want in top grade "soft" hammers and mallets. And Chicago means the best in Rawhide. C/R mallets and hammers are made from resilient, tightly coiled rawhide. They absorb shock, deliver powerful blows yet protect delicate machinery and surfaces, and stand up under continuous hard use. They do not split, crumble, or mushroom. Whenever you need durability, power and safety, always specify Chicago Rawhide hammers and mallets.

CHICAGO Rawhide MFG.CO.

1203 ELSTON AVENUE

CHICAGO 22, ILLINOIS

Other C/R maintenance products are: round, flat and twist belting; belt pins and belt lacings; gears, pinions and gear blanks; aprons and hand leathers; hydraulic packings.

## ELECTROPOLISHING PROCESS FOR STAINLESS STEEL

An improved electropolishing process for stainless steel was demonstrated by The American Rolling Mill Company at the recent Industrial Finishing Exposition in Detroit.

Essentially the process is the reverse of electroplating. The stainless steel is the anode, and metal is removed. In electroplating the work is the cathode, and metal is deposited.

At the convention a miniature lead-lined electropolishing tank was used as a demonstrator. On cold-drawn stainless steel wire products only 2 to 8 minutes' time in the tank was necessary for a good polish. Rough surfaces, as in the case of castings and forgings, require slightly longer periods. The amount of metal removed is very small, usually only a half-thousandth to a thousandth of an inch.



Electropolished stainless steel wire parts

The solutions used with these patented processes are: Citric-sulphuric acid, glycolic-sulphuric acid, and phosphoric acid-butyl alcohol solution. In operation, the solution temperature is held between 185° and 200° F. Sludge precipitating in the polishing process is removed periodically. The phosphoric acid-butyl alcohol solution differs in that it operates at about 140°-160° and precipitates a slime.

The current density for electropolishing is about the same as for electroplating. One-half to one ampere per square inch gives the best results in two solutions, but 1-1½ amperes should be used for phosphoric acid-butyl alcohol. A direct current source of 6 to 12 volts is sufficient to polish any parts.

According to the demonstrators, an important advantage of electropolishing lies in cutting polishing costs on certain products. They pointed out that in the case of small and intricately-formed products the cost of mechanical polishing is often prohibitive. But with electropolishing an extremely thin layer of metal is removed from the whole surface This gives the entire product a brilliant lustre and solves the problem of polishing hard-to-reach crevices and recesses. When polishing small deep-drawn products

(Please turn to page 216)

SET-UPS...

Day by day,

the popularity curve of the set-up box is rising far above that of all other competitive packages. Attractively designed, the set-up box commands more attention at point of sale. Rigid and durable, it assures your product greater protection from your plant to the consumer's home. Then too, its compactness facilitates handling, shipping and storage. With a versatility not possessed by any other package, this container is economical too, offering you more for your money. Make the set-up box an important part of your plans for '48 and watch *your* sales curve rise.



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# ....how much is it worth?



It was NINE YEARS before the first gasoline-driven automobile in the United States was operated by C. E. Duryea that the Brooklyn Bridge was opened in 1883. This fabulous engineering achievement was the culmination of over 26 years of planning and building, of bold vision and heart-breaking struggle, by John A. Roebling and his son Washington.

But the steadfast confidence of father and son in the success of their amazing venture is vindi-

cated daily by the modern traffic this world-famous bridge continues to carry now . . . 64 years later.

How much is that confidence worth to you today... and to the John A. Roebling's Sons Company, now embarked on a multi-million dollar expansion program to meet the future's challenge? Confidence is the driving power behind our efforts to make better products do better work for you.

#### ROEBLING WIRE QUALITY REWARDS YOUR CONFIDENCE-CONSISTENTLY

WHEN YOU SPECIFY ROEBLING, you're sure the wire will meet your toughest specifications . . . down to microscopic measurements, if necessary. That gives you smooth, speedy production . . . fewer machine jams . . . fewer rejects . . . fewer unproductive man-and-machine hours . . . and less chance of damaging expensive dies. It helps you trim costs . . . put lower price tags on your finished products.

Here at Roebling, everything needed to assure wire quality is on hand—the last word in modern, specialized equipment, skilled workmen trained in the Roebling tradition, careful control throughout of the manufacturing process. Add, too, the background of a century's wire-making experience. Little wonder the wire you get is uniformly "tops" in dimensional accuracy, in temper, in finish.

For dependable answers to your wire questions, check first with your Roebling Field Engineer. Call him at our nearest branch office.

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# always call SUPERIOR

Superior's method of continuous "quality-control" is your assurance of gray iron, alloy iron and electric furnace iron castings which meet the requirements of the most exacting specifications. Offering consistent uniformity of grain structure and cross section density, Superior castings may be milled, drilled, turned and otherwise machined easily and economically. That's why it always pays to call Superior.

#### METALLURGICAL CONTROL

Closest control of the melt, assures highest quality of finished product.

#### **MACHINABILITY**

No hard spots to dull tools; uniform grain structure assures easy machining.

#### ACCURACY TO SPECIFICATIONS

Superior experience and "know-how" assure uniform castings accuracy.

#### CLEAN SURFACE

Superior castings have clean, smooth surface.

SUPERIOR FOUNDRY, INC.

SUP RIOR MIchigan 3078

(Continued from page 212)

cathodes of special design may be used.

Sometimes the product may need mechanical work before electropolishing to remove grinding marks and deep scratches. Electropolishing exaggerates these inperfections; yet even on rough surfaces electropolishing produces a bright finish.

This process is said to be excellent for polishing stainless steel wire products such as refrigerator shelves, meat racks and kitchen tools. It removes light weld scale and discoloration such as that resulting from resistance welding.

An illustrated folder giving additional information may be obtained by writing The American Rolling Mill Company, Middletown, Ohio.

# "DAYLIGHT" COLOR PAINTS DEVELOPED BY GLASS COMPANY

1 1 1

A series of interior "daylight" paint colors designed to lessen eye fatigue in industrial office workers is a development of the Libbey-Owens-Ford Glass Company, Toledo, O. The company will not produce the paints.

The colors, originated by H. Creston Doner, director of the design department of the company, comprise four off-shades of white scientifically formulated to reduce glare from direct and reflected light. The shades have been standardized by spectrophotometer records and can be furnished by any paint manufacturer, the company states.

The four standard shades for factory use are: one for upper walls and ceilings to reduce glare and eliminate after-images when eyes are turned away from a window; one for machinery above the eye level; one for wainscoting and all wall areas at eye level, and one for machinery and traffic lanes below eye level.

# IMPROVED MATCHED TOOL STEELS DEVELOPED BY CARPENTER

To give tool and die makers greater simplification in the selection, heat treatment and use of tool steels, a new and improved set of matched tool steels has been developed by The Carpenter Steel Company, Reading Pennsylvania.

In recent years, air-hardening tool steels have proved themselves invaluable for jobs where minimum distortion in heat treatment and elimination of hardening hazards are essential. However, it has been found that the large variety of available grades complicates the problem of finding the one best steel for each job. Now, with the addition of 3 air-hardening tool steels to the matched set, tool and die makers can select, with greater assurance, the right steel for the job. Where extreme wear resistance and good toughness are needed, No. 610 (Air-Wear) is recommended. For jobs where an ideal combination of wear resistance and toughness is essential, tool makers can use No. 484 (Air-Hard). VEGA (Air-Tough) is

(Please turn to page 220)

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ideal

No.

Here, your Spring gets

-Point Production Analysis

for SIZE OF ORDER

for UNIFORMITY (if repeat order)

for PROPER TOOLING

for SPECIALIZED MACHINERY

appraised for those specifications which, if not properly anticipated, may result in extra operations which naturally means extra cost. By use of specialized departments, ingenious machines and toolmakers with experience and imagination, operations are reduced to a minimum consistent with quality and quantity desired. Wallace Barnes job-engineering, working simultaneously with your design-engineering, should result in the greatest production economy and the best spring for your purpose.

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During these times of scarcity, you may find items available in our stocks which would help you through production problems. Inform us of your needs and write for a copy of our current stock list.

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THIS gear is used in an inertia starter. It has to kick over a heavy aircraft engine until the pistons go to work. For this grueling application, alloy steel is a must.

Note the machining required. Then multiply it by a production quantity. As with every production application, machinability becomes a must, too.

That's why Frasse stocks 11 medium-carbon alloy steels in only one condition—annealed. You've alloy properties galore to choose from when you work from Frasse stocks. But no matter what the analysis, it has been treated for faster, easier machinability, and for uniform structure.

There's no fear of non-uniformity when you use Frasse alloys. You get the same machinable structure with every order. Standardize, for warehouse alloy steels, on Peter A. Frasse and Co., Inc., 17 Grand Street, New York 13, N. Y. (Walker 5-2200) • 3911 Wissahickon Avenue, Philadelphia 29, Pa. (Radcliff 5-7100) • 50 Exchange Street, Buffalo 3, N.Y. (Washington 2000) • Jersey City • Syracuse • Hartford Rochester • Baltimore



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SUBSIDIARY OF DODGE MFG. CORPORATION, MISHAWAKA, INDIANA

(Continued from page 216)

used for tools that require extreme toughness with good wear resistance.

So that tool steel users can get the cost reducing advantages of the best available tool steels, two new members have been placed in the Red-Hard matched set. T-K (Red-Hard) combines hardness with improved toughness, insuring more universal application. And because No. 883 (Red-Tough) offers extreme toughness and greater red hardness, it can be applied to a wider field of uses.

Both the oil-hardening and waterhardening matched sets, long familiar to tool steel users, remain unchanged.

#### 90% of Toolmaking Jobs

The 12 steels that make up the complete Carpenter Matched Set are so interrelated that each takes up the work where the other leaves off. As a result, tool makers can know in advance what results to expect as they move from one steel to another. Because it is easier to select the right steel for each job, production can be increased and unit costs lowered through longer tool life and fewer tool failures, it is claimed. And the fact that the tool steel user can now choose from far fewer steels to do over 90% of his tool making jobs, means less complicated heat treating procedures, lower inventories and fewer chances of tool steel mix-ups, according to the manufacturer.

#### NEW SURFACE FINISHES FOR POLYSTYRENE PLASTICS

1 1 1

Development of a successful line of clear and colored surface finishes for polystyrene plastics has been reported by the Monsanto Chemical Company, Everett, Mass.

Coating chemists and plastic technicians have reported that the lacquers overcome the tendency of solvents to produce crazing in polystyrene. The lacquers are either clear or pigmented, resistant to oil and will protect the polystyrene. They were developed to make possible the coating of the face or the back of the clear moldings in color and to provide wipe-in colors for dials, trademarks and decorations.

The lacquers can be sprayed onto the polystyrene surfaces and will dry rapidly to a hard, adherent and mar-resistant finish of high gloss suitable for an exterior finish. The wipe-on coatings or coatings applied to inlays, such as dial numerals, letterings and designs, are usually applied with a brush.

#### NEW TYPE OF DUAL METAL WIRE NOW IN PRODUCTION

1 1 1

An entirely new type of electroplated and drawn wire that can be bent, swaged, hammered, woven or twisted without flaking is now produced in commercial quantities at the new plant of Kenmore Metals Corporation in Warren, Pennsyl(Please turn to page 222)

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# LION Naturalube D.H.D. OIL

# RESISTS SLUDGING . REMOVES CARBON

# More Power - Lower Operating Cost

Naturalube D. H. D. Oil is refined from a basically different crude oil that has amazing natural properties. Because of them, D. H. D. is able to loosen and remove hard carbon naturally. It has greater natural ability to penetrate to all parts of an engine. It has greater natural ability to cling to those parts. You get the constant wear-saving protection of a naturally tougher oil film. And D. H. D. is non-corrosive — safe!

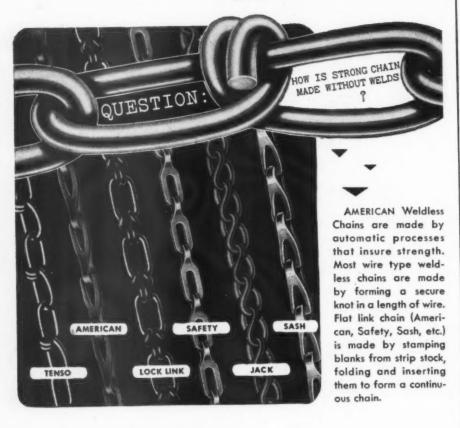
In addition, Naturalube D. H. D. is specially reinforced to give greater resistance to the formation of power-destroying sludge and lacquer.

D. H. D. gives you these big advantages in truck fleet operation: less wear, fewer repairs, more power from a cleaner engine, and lower operating and maintenance costs. Leading engine manufacturers accept Naturalube D. H. D. as a superior lubricant.

For complete information, ask your Naturalube Distributor or write direct to Lion Oil Company, El Dorado, Ark.



# STRONG ... ENDURING ... ADAPTABLE



# AMERICAN

WELDED AND WELDLESS CHAIN

Shown here are some of the more popular AMERICAN weldless chains. American Chain also offers a complete line of electric welded and fire welded chainchain fittings and assemblies-repair links-cotter pins-hooks. Whatever your chain needs, get in touch with your AMERICAN CHAIN distributor.



York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

AMERICAN CHAIN DIVISION AMERICAN CHAIN & CABLE

In Business for Your Safety

(Continued from page 220)

vania. The new wire product has a wide range of manufacturing applications in radio tubes, incandescent and fluorescent lamps, electrical devices and appliances,

jewelry, and wire goods.
"Fernicklon," trade name of the new product, is the result of an entirely new process. Metal rods of 1/4" diameter are first electroplated continuously with perfect accuracy, then cold-drawn down to diameters as fine as 0.0038". One inch of 1/4" plated rod may produce as much as 100,000 feet of plated wire, permitting it to be ordered in continuous sections of almost any length.

Initial production at the Warren plant includes steel wire with nickel, copper wire with nickel or silver for radio tubes and lamps, household utensils, tinsel wire and thousands of other wire products where finish and durability are required. Die polish or satin finishes are available. Because of its surface perfection and the absolute bond between its constituent metals, Fernicklon can be subjected to the severest climatic conditions when an anti-corrosive coating metal is used. can also be welded to form a product without destroying the coating at the point of the weld.

Plans are under way to supply the wire in many other combinations such as copper on steel, zinc on steel, etc.

#### ALCOA INTRODUCES ALUMINUM INDUSTRIAL ROOFING

1 1 1

Production of a new, high-quality aluminum roofing material for industrial use, to be called Alcoa industrial roofing, was recently announced by Aluminum Company of America, Pittsburgh, Pa.

The new product is a lightweight, specially-formed material heavy-duty specifically adapted to factories, warehouses, storage depots, hangars, and similar structures. Alcoa states that the new roofing will carry heavy loads and meet the exacting requirements of building codes.

Made from a special aluminum alloy, the new material will be an industrial running-mate for the standard Alcoa roofing sheet. It is an engineered product, having been designed for use on open framed buildings.

Combining high strength, exceptionally high resistance to industrial atmospheres, minimum maintenance and reduced roof load, Alcoa Industrial Roofing will have a covering width of 32 inches, allowing for a side lap of 11/2 corrugations. It will come in standard five-foot through twelve-foot lengths, .032 inches thick.

Alcoa also announced that industrial aluminum siding, of the same alloy and lengths as the roofing, is going into production at the same time. The siding will have a coverage of 32 inches, and will meet code requirements for siding materials.

It was stated that Alcoa Industrial Roofing and Siding will be offered for

(Please turn to page 224)

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for

# so many Sealedpower motors are being built today

More and more purchasers are specifying the Crocker-Wheeler Sealedpower Motor because they know it continues to operate year without "time out" for either doesn't have to be taken apart and cleaned

Crocker-Wheeler Engineers developed the Sealedpower Motor to permit continuous operation without shut-downs for the removal of dust and dirt from easily-clogged, hard-to-clean, double-walled passages found in conventional fan-cooled motors. The ventilating always blown outside the frame, directed by properly guide and distribute

The vital operating parts are completely cut off from outside air. They run in a pocket of clean air, sealed in a frame of cast iron, immune to abrasive dust, corrosive fumes and

Arrows show path of cooling air over exterior of frame.

The complete story of this exclusive Crocker. Wheeler design . . . the Sealedpower Motor your copy today. See what this motor will



CROCKER

WHEELER

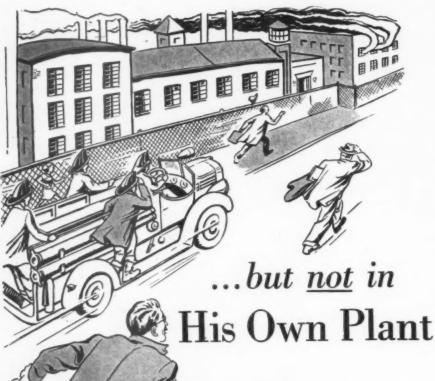
ELECTRIC MANUFACTURING COMPANY, AMPERE, N. J.

A Division of The J. shua Hendy Corporation

Branch Offices: Boston, Chicago, Cincinnati, Cleveland, Los Angeles, New York, Philadelphia, Fittsburgh — Representatives in Principal Cities.

QUALITY MOTORS AND GENERATORS SINCE 1888

# Everybody loves to see a fire



There's something exciting about a fire, but when it's your property, that's another story. Stop fires when they start with C-O-Two fire equipment. Prevent costly damage. C-O-Two is clean, modern, carbon dioxide fire protection. It's versatile; C-O-Two is used to protect electric and flammable liquid hazards of every size. It is non-conducting, non-deteriorating, harmless to the most delicate instruments.

See that your plant has C-O-Two protection. Check your dip tanks, bake ovens, spray booths, rheostats, switch panels, and other electric equipment. Don't overlook blueprint and record vaults. Then write us for a catalog or let one of our expert representatives help you plan complete C-O-Two fire protection.



Sales and Service in the Principal Cities of United States and Canada Affiliated with Pyrene Manufacturing Company (Continued from page 222)

sale through normal channels of distribution. All necessary fittings and accessories such as ridge roll, flashings, rivets, nails, straps, etc. will be supplied with roofing and siding.

Alcoa engineers state that the new product meets safe load requirements (using a factor of safety of 2), ranging from a 30-pound per square foot uniformly distributed load on 6'5" purlins up to 105-pound load on 3'6" purlins. The material has excellent weathering qualities, and paint or roofing preservatives are unnecessary.

## PRESSING UNDER VACUUM A NEW TECHNIQUE

To overcome the difficulties and limitations of tablet compressing at atmospheric pressure, the F. J. Stokes Machine Co., Philadelphia 20, Pa. has developed a new machine and technique in which compressing is done under vacuum pressures which are varied to meet conditions. This press applies a maximum of 20 tons pressure from above and below, has a die fill of 25%" and will produce pieces up to 3" diameter.

Pressure from above is exerted by means of an adjustable eccentric crank and on the lower punch by cam action. A vacuum chamber surrounds the die table, the punches and the feeding device. The feed hopper, with vacuum cover, is attached to the top of the vacuum chamber and a receptacle under vacuum receives the finished parts at the side of the main vacuum chamber. Special stuffing boxes seal the upper and lower plungers where they enter the chamber. In other respects the press, known as the RV-4 is similar to the Stokes R-4, utilizing standard punches and dies, which are removable through the door of the vacuum chamber, and other standard equipment and movements.

Advantages claimed for vacuum compressing as compared with atmospheric compressing are: elimination of air produces pieces which would ordinarily laminate due to air cracks. Material feeds more freely. Generally less depth of fill is required because of increased density of loose powders. Thicker pieces can be usually be produced with a given depth of fill. Press speeds can be stepped up. Savings in material costs can sometimes be made by reducing the quantity of binder, and vacuum pressing does not require such a high degree of uniformity in granulations. No air in the chamber prevents 'puffing' as the upper punch enters the die. There is little or no loss in material, and no soft spots occur at the edges of the piece. Operation is cleaner, with less dispersion of fine dust and resulting wear on machine parts.

Further tests are being conducted on metal powders, carbon mixes, sintered carbides, ceramic tiles and other applications for which the new technique seems to offer possibilities. Data will be made available as it is authenticated.

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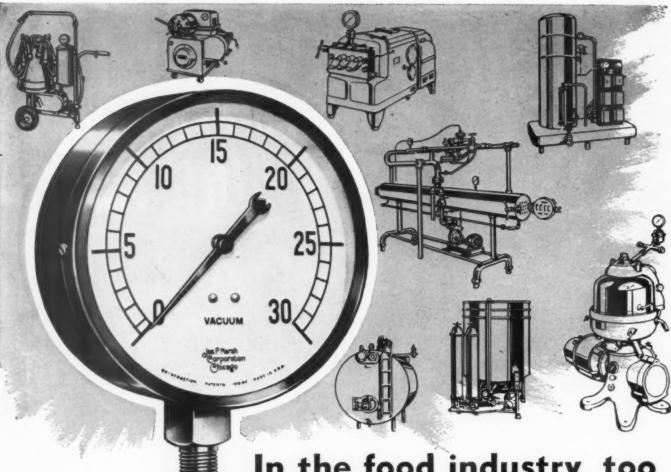
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FACTORIES: WILLOUGHBY, OHIO . LONG BEACH, CALIF. . CONNEAUTVILLE, PA.
BRANCH OFFICES: DETROIT . NEW YORK . CHICAGO . INDIANAPOLIS . CLEVELAND . BOSTON



In the food industry, too leading machinery manufacturers rely on *Marsk* . . . . .



MARSH ALONE HAS THE

... quickest and best way to correct a gauge that has been knocked out of adjustment by improper handling. Manufacturers of milk processing, canning, packing and similar equipment know the vital importance of highly dependable, extremely accurate pressure and vacuum indication. That is why Marsh Gauges are on the preferred list in the food-machinery field . . . are chosen as standard equipment by the largest producer of machinery of this type and by 32 other leading food-equipment manufacturers.

The wide range of conditions found in the highly varied processes of the food industry are a real challenge to pressure gauge quality, so the preference shown by this industry is an impressive tribute to Marsh design and construction. However, it is no more significant than the preference shown by manufacturers in many other fields.

These manufacturers who use gauges as standard equipment have found in Marsh instruments the uncompromising quality that has made them "The Standard of Accuracy." In short, they have found the kind of product they are proud to make part of their own product!

Consider this when you choose a gauge or when you purchase equipment requiring a gauge. Insist on the Gauge that is preferred by the most discriminative users of pressure gauges—MARSH.

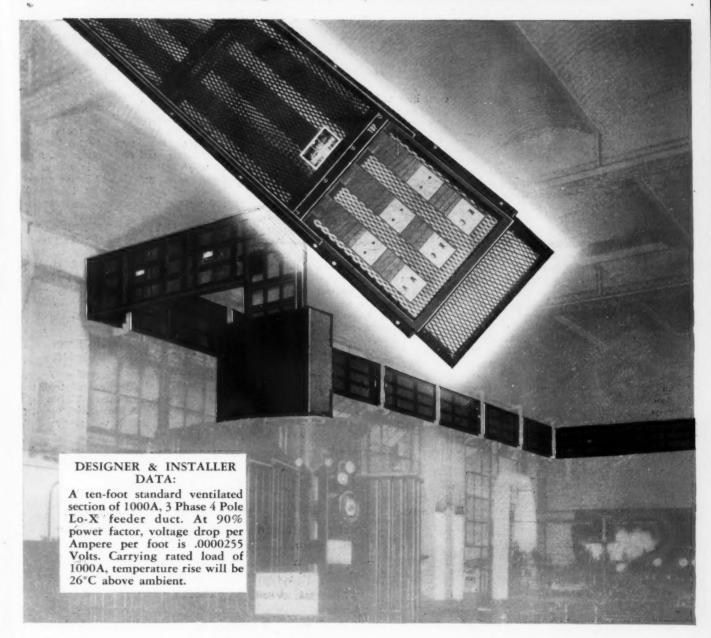
JAS. P. MARSH CORPORATION, 2035 Southport Avenue, Chicago 14, Illinois Export Dept.: 155 E. 44th St., New York 17, N. Y.

Jas. P. Marsh products include: A full line and range of gauges in pressure, compound, altitude, hydraulic, sprinkler, ammonia, ounce-graduated retard, test, and diaphragm types. Dial thermometers in rigid stem and remote reading types. A broad line of steam and hot water heating specialties. Ask for literature.

MARSH GAUGES

# Get the drop on voltage drop

with BullDog Lo-X BUStribution DUCT



VOLTAGE drop can be figured—and so can temperature rise—even before your feeder system is installed.

The answer to these critical power distribution problems lies in BullDog Ventilated Lo-X BUStribution DUCT. And what do these problems mean to you? Just this:

- 1 Underpowered equipment can't operate efficiently. At ten percent under voltage, induction motors have 19% less maximum running torque. And incandescent lights yield 30% less illumination!
- High temperatures shorten the life of your distribution system and needlessly increase electrical costs.

#### What to do about it:

Be sure that your operating voltages and temperatures are curbed to insure peak performance by specifying BullDog Ventilated Lo-X BUStribution DUCT. Unique, superior design minimizes voltage drop and temperature rise. Prefabrication makes it possible to predetermine both factors.

Call a BullDog Field Engineer for full information. Or, write BullDog direct for descriptive literature.

BullDag manufactures Vacu-Break Safety Switches—SafToFuse Panelboards—Superba and Rocker Type Lighting Panels—Switchboards—Circuit Master Breakers—"Lo-X" Feeder BuStribution DUCT—"Plug-in" Type BuStribution DUCT—Universal Trol-E-Duct for flexible lighting—Industrial Trol-E-Duct for portable tools, cranes, hoists.

Detroit 32, Mich. Field Offices In All Principal Cities. In Canada: BullDog Electric Products of Canada, Limited, Toronto



BULLDOG



# Among the ASSOCIATIONS

# To Appraise Supply and Demand at District No.7 Annual Conference at Louisville

"Purchasing Appraises the Supply and Demand Picture Now and in the Future"—is the theme for the fourth annual conference of Purchasing Agents of the Southeast when more than 300 of the leading purchasing executives from the southern states gather in Louisville at the Kentucky Hotel, October 16-17.

The supply and demand for the near term will be explored by R. C. Swanton. director of purchases for the Winchester Repeating Arms Co. of New Haven, Conn., and other phases of this vital problem will be discussed by equally competent and nationally famous authorities. Mr. Swanton is a past president of the National Association of Purchasing Agents and the present chairman of the NAPA's important Business Survey Committee.

The Conference will get underway at 9:30 Thursday morning, Oct. 16, with an address of welcome by J. T. Kinberger, purchasing agent, Gulf Refining Co., and president of the Purchasing Agents Association of Louisville. Louisville's mayor, E. Leland Taylor, will welcome the visiting purchasing executives to the famous Kentucky Derby city.

A feature of the Thursday afternoon session will be an information panel, at which time problems suggested by the participants in the Conference will be explored. Included in the panel will be George A. Renard, executive secretary of the National Association of Purchasing Agents, and Garnet T. Dickson. Goodyear Tire & Rubber Co. of Canada, New Toronto, Canada, and president of the NAPA. Both Mr. Renard and Mr Dickson will deliver formal addresses at other sessions of the Conference.

The featured speaker at the banquet Thursday evening will be Col. Jack Major, Paducah, Ky., famous humorist and public relations expert. He has toured Australia and New Zealand as a public speaker, and prior to the war was retained in a public relations capacity by the Union Oil Co. of California, and subsequently by the Texas Oil Co.

The activities of District Seven, NAPA, will be outlined by Harlan E. Cross, general purchasing agent, Sloss Sheffield Steel & Iron Co., Birmingham, Ala. Mr. Cross is a past president of the Purchasing Agents Association of Alabama and a past vice-president of District Seven of the National Association He is currently chairman of the District Activities Committee for District Seven.

A full entertainment program for wives of purchasing agents attending the conference is being arranged by a special

committee and those registering for the conference are urged to bring their wives to Louisville for these two days.

The Conference will formally adjourn Friday noon, Oct. 17. The afternoon is being set aside for plant visitations in the Louisville industrial area and golf for those who desire to play. A feature of the golf play will be an inter-association tournament, with each local or state association in the district entering a team in the competition. A trophy donated by the Courier-Journal Job Printing Co., Louisville, and given to the Louisville Association, will be presented to the winning team and will become the permanent possession of any association winning it three times

Registration forms have been sent to all buyers throughout the south. William M. Kerrick, director of purchasing for the Mengel Co., and general chairman of the conference, emphasizes that the meeting is open not only to all purchasing agent association members, but to all executives who are charged with purchasing responsibilities.

Ample hotel accommodations are as-(Please turn to page 234)

## ANNUAL PRODUCTS EXHIBIT AT BALTIMORE NOVEMBER 4-5-6

The seventh annual manufacturers' products exhibit, sponsored by the Purchasing Agents Association of Baltimore will be held on Novemer 4, 5 and 6 at the Lord Baltimore Hotel.

Displayed in the various booths making up the exhibit will be the latest in mill, factory and office equipment, some of which will be shown in action. A feature of the exhibit will be the awarding of prizes for the most informative and for the most attractive and decorative booths.

The Exhibitors' Breakfast will be held on November 5, and will feature a prominent speaker who will talk on some phase of present conditions. J. H. Gaston, City Purchasing Agent, is general chairman of the exhibit.

## DALLAS ASSOCIATION VISITS PETROLEUM PLANT

1 1 1

Members of the Purchasing Agents Association of Dallas were guests of the Magnolia Petroleum Co. for a plant vis:t at its field research laboratories recently. Buffet dinner was served at the company's cafeteria.

### District Conferences

- District 1—Salt Lake City, Utah, October 31-November 1.
  Associations: British Columbia, Los Angeles, Northern California, Oregon, Utah, Washington.
- District 2—Tulsa, Okla., October 2-3. Associations: Dallas, Fort Worth, Houston, Oklahoma City, Tampico, Texas Panhandle, Tulsa, Wichita.
- District 3—Milwaukee, Wis., October 15-16. Associations: Chicago, Denver, Kansas City, Milwaukee, Rock River Valley, St. Louis, Tri-City, Twin City, Twin Ports.
- District 5—Toronto, Can., October 17-18. Associations: Central Ontario, Essex-Kent, Hamilton, Montreal, Toronto, Winnipeg.
- District 6—Cleveland, O., October 3-4. Associations: Akron, Canton, Cincinnati, Cleveland, Columbus, Dayton, Northwestern Pennsylvania, Pittsburgh, Springfield, Toledo, Tri-State.
- District 7—Louisville, Ky., October 16-17. Associations: Alabama, Chattanooga, Florida, Georgia, Louisville, Memphis, New Orleans.
- District 9—Springfield, Mass., November 5-6. Associations: Connecticut, New England, Rhode Island, Western Massachusetts.

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Your electric
industrial trucks
will do more
work when powered
by the new
"TWIN POWER"

GOULD

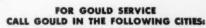
Gould research, which introduced and perfected the famous Kathanode construction, has now created "Twin Power". This is an improvement in plate balance that increases power output and insures long, uninterrupted service.

In modern material handling Gould "Twin Power" Batteries add new advantages to the many inherent in electric industrial trucks. Their sustained power means more ton-miles each shift. Thoroughly protected, they are unusually free from service breakdowns: they stay on the job. For complete information get Catalog 100, Gould Storage Battery Corporation, Depew, New York.



Gould Service Engineers will make periodic inspections of your industrial storage batteries. In the Detroit area ask for F. L. Wamsley, Gould Storage Battery Corporation, 6432 Cass Ave., Detroit 2, Michigan.

GOULD Thirty and KATHANODE



Boston, Mass. • Cincenati, Ohio • Cleveland, Ohio Chicago, Ili. • Denver, Colo. • Depew, N.Y. • Detroit Mich. • East Point, Ga. • Kansas City, Mo. • Lo Angeles, Cal. • New York, N.Y. • Philadelphia Pa. • Pittsburgh, Pa. • St. Louis, Mo. • St. Paul Minn. • San Francisco, Cal. • Trenton, N. J. • Washington, D. C. • West Salem, Ore. • Kingston Ont., Canada. NOTE: Electric hand truck batteries are stocked at many of these cities.

BATTERIES



U. S. Steel's Geneva Plant near Provo, Utah, is one of the world's largest steel plants.

# Utah Association Host to Pacific Inter-Mountain Conference At Salt Lake City Oct. 31 and Nov. 1

Salt Lake City, "the Friendly city", will have its latch-string out for members of the Purchasing Agents Association of District One when they meet in the is being arranged which will allow time for the visitors to see many of the attractions which Salt Lake City and Utah offer.



North America's largest open-cut copper mine at Bingham

Utah capital city to hold their Pacific Intermountain Conference October 31 and November 1.

About 250 visitors are expected to attend the conference, plans for which have been in the process of making for several months. An interesting program

Salt Lake City is one of America's most interesting cities. This charmingly situated city, with an estimated population of 245,000 in its metropolitan area, is built in the heart of the mountains, 4,354 feet above sea level, and has a mean annual temperature of 54 degrees.

The outstanding feature of the Utah landscape is its mountains. There is no spot in Utah's 84,990 square miles where the horizon is not uplifted by the scalloped outline of lofty mountains. Down the center of the state stretches the picturesque Wasatch range, on the western slope of which, between the mountains and Great Salt Lake, nestles Salt Lake City. Perhaps best known by the world at large for the unique manner of its founding and for the religious, cultural and politico-economic concepts of its founders, Salt Lake City never fails to impress the visitor today with the sheer delight of its physical beauty.

Salt Lake City is noted for its broad streets, with water running in the gutters to keep them clean. The town radiates southeastward from Temple Square, mostly in 10-acre blocks that are varied in architectures, uncongested in appearance, virtually without slums.

At least two of the city's landmarks are known the world over—the Tabernacle and the Temple of the Church of Jesus Christ of Latter-Day Saints. The former, with its enormous turtle-shell roof, the world's largest having no supporting pillars, seats ten thousand persons. The richly spired Temple, of Utah granite, cost more than \$4,000,000 during

(Please turn to page 234)



Salt Lake City's world-famous Temple Square in the heart of the city.



You float like a cork in Great Salt Lake which is but 15 miles from Salt Lake City.



# When war came ... THIS PLANT WAS 10 MONTHS OLD!

Looking back now over its first 75 years of pioneering in the threading tool field, there is no greater satisfaction to the men of GTD "Greenfield" than the fact that its gage "war plant" was already 10 months in production when the Japs struck at Pearl Harbor.

GTD "Greenfield" is proud of this achievement, because it was the outgrowth of years of cooperation with the army's long range procurement program. Since the ending of World War I GTD "Greenfield" and many of its key personnel have

been closely identified with the Industrial Mobilization Program and the "Defense Program" which went into high gear early in World War II. Hence, our gage plant was not so much an overnight "war plant" as it was the natural culmination of an integrated program.

With a record of five "E" awards behind it, this "war plant" is now a "peace plant", utilizing the organization and the new techniques developed during the past six years to meet an unprecedented peacetime demand for gages.



A recent development in the manufacture of gages has been GTD "Greenfield's" introduction of formed clearance in the major diameter of ring thread gages. Before this development, root clearance was ignored, but under the more scientific manufacturing procedures guess work is eliminated and formed or controlled clearance has resulted in a greatly increased wear life on ring thread gages.



GREENFIELD

The GEOMETRIC TOOL COMPANY



for "Express Train" Assembly Speeds that Cut Costs for Streamlined Looks that Sell\* Customers

"HIGHBALL" PRODUCTION - "Highball's" the railroad term for get moving - and that's just what you do when fumble-proof, power-driven American Phillips Screws take over! Whether you make streamliners, appliances, radios or what not, American Phillips Screws can't slip off "the track" to harm work or worker—and there isn't a burred screw head in a carload. This automatic, speedy driving of engineered screws ups production schedules while gaining time-savings as high as 50%!

"HIGHBALL" PROMOTION — Smart, sleek, streamlined American Phillips Screws tell a quality story FAST—are a modern complement to high-style products. They can't snag hose or clothes. And more and more buyers spot them as a tip-off to solid construction and longer service. Whether you sell industry or the consumer, get the facts on the DOUBLE advantages (in production and promotion) provided by American Phillips Screws.

\*The railroads and the public.

4-WINGED DRIVER CAN'T SLIP OUT

OF PHILLIPS TAPERED RECESS

AMERICAN SCREW COMPANY, PROVIDENCE 1, RHODE ISLAND Detroit 2: 502 Stephenson Building Chicago 11: 589 E. Illinois Street

**AMERICAN** PHILLIPS Serents ALL TYPES ALL METALS: Steel, Brass, Bronze, Stainless Steel, Aluminum, con bronze)

For any load or any speed Just bear on me for what you need



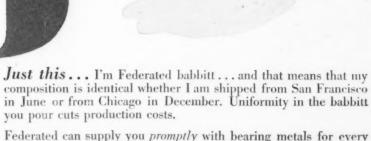
With many laboratory checks And strict control I'm held to specs



With each re-order, pound or ton My composition varies none



SO WHAT?...



Federated can supply you promptly with bearing metals for every purpose . . . "XXXX Nickel" and "Thermodyne" tin-base babbitts for heavy bearing loads; "Merit Metal" and "Record" lead-base babbitts for lighter loads; "G" and "S" lead-base babbitts for precision bearings or special properties. When you need him, the friendly Federated service man is ready to answer your questions about bearing metals, or help with any non-ferrous problems.

Federated Metals Division, American Smelting and Refining Company, 120 Broadway, New York 5, New York.



Federated METALS DIVISION

AMERICAN SMELTING AND REFINING COMPANY

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(Continued from page 230)

forty years of elaborate construction.

A Bureau of Information is maintained inside the south gates of Temple Square and guides are available to point out the various objects within the enclosure. At South Temple and Main Streets, the meridian of the city's street system, stands the Pioneer Monument, a massive granite pedestal surmounted by a bronze figure of Brigham Young.

Nature has given to Salt Lake City an exclusive endowment for the entertainment of its people and visitors bathing in the Great Salt Lake, near the city. The water, a solution of about 27 per cent salt, buoys you up as though



This picture portrays Salt Lake's metropolitan character. Views furnished by the Salt Lake City Chamber of Commerce.

you were a feather. It is impossible to sink.

Salt Lake City's prosperity stems partly from mineral deposits in the territory. At nearby Bingham is the largest opencut copper mine in North America, from which 10 per cent of the world's supply is derived. The salt industry, flour milling, meat packing, refining of beet sugar, textile manufacture and publishing contribute to the city's business.

## HIGHER PRODUCTION NEEDED JOHNSON TELLS LOUISVILLE

Speaking at the regular meeting of the Purchasing Agents Association of Louisville, September 16, Keen Johnson, president of Reynolds Metals Co. called for higher man-hour production and whole-hearted cooperation between labor and management. Dr. Charles W. Williams, professor of economics at Louisville University, also spoke.

# # # # # BRITISH COLUMBIA ASSOCIATION HEARS SALESMAN'S VIEWPOINT

At the first meeting of the British Columbia Purchasing Agents Association, F. W. Benwell, sales and advertising executive, spoke on "The Purchasing Agent from the Salesman's Viewpoint."

## First Annual Conference District No. 3 At Milwaukee, October 14-15

The first conference of District 3, National Association of Purchasing Agents will be held on October 14 and 15 in the Milwaukee Auditorium, Milwaukee, Wis. The conference is being sponsored by the Milwaukee Association of Purchasing Agents and will be held in conjunction with the association's 1947 Products of Industry Exhibit, the first to be held in seven years.

The conference will open unofficially on Wednesday October 13, with a "get-to-gether party" at the Wisconsin Hotel. The first business sessions will be held Tuesday morning, October 14, with E. L. Block, general conference chairman, presiding. Speakers at the morning meeting will include F. G. Syburg, president of the Milwaukee association; Paul O'Brien,

District 3 vice-president, and John L. Bohn, mayor of Milwaukee. George Renard, National Secretary, will be guest speaker at the noon luncheon.

Commodity discussions will be featured throughout the two days. Other topics to be covered include "Building and Construction Trends", "Buyer-Seller Relationship", "The Future of Purchasing", and "Economic Trends". A "Products of Industry Banquet" will close the conference on Wednesday evening, October 15

The Products of Industry Exhibit, last held in 1940, will have 160 booths, the largest number of exhibitors in its history. The exhibit will run from October 14 to 16, one day longer than the conference.

# Appraise Supply & Demand District No. 7 Conference

(Continued from page 228)

sured. Since there will, however, be a scarcity of single rooms, those registering for the conference are urged to double up with a fellow purchasing agent and request a double room. Every effort will be made to house registrants for the conference in the Kentucky Hotel, which will be the headquarters hotel and the scene of all the sessions.

The Louisville Association will be hosts to visiting purchasing agents at an hour of relaxation just before the Thurs-

day evening banquet.

Registration blanks may be obtained by addressing Calvin H. Marcus, Edward H. Marcus Paint Co., 235 East Market Street, Louisville, who is registration chairman. The registration fee is \$12.50 and \$7.50 for wives. Both fees include tickets to all functions, including the banguet.

Louisville is particularly well situated, with direct transportation lines by both air and rail channeling into the Kentucky city from all major points throughout the south.

NEW YORK ASSOCIATION HAS FOURTEEN ACTIVE COMMITTEES

In addition to its Executive Committee, the Purchasing Agents Association of New York, has fourteen operating committees, one of which is a Commodities Committee recently appointed by President David M. Meeker, The Paraffine Companies, Inc., which consists of a chairman and eight members who will report monthly on eight key commodities. The committees and their chairmen are as follows:

Advisory Committee, five members, Harold K. LaRowe, American Cyanamid

Auditing Committee, three members. George L. Geiger, Bank of New York. Attendance Committee, seven members. Michael D. MacBurney, McKesson & Robbins, Chemical Division.

Commodity Reports

Commodity Reports Committee, nine members, William E. Duryea, White Laboratories, Inc., Newark, N. J. Reports will be made by the following: Millard W. Merrill, United States Metals Refining Co., Fuel Oil; Edward P. Walley, Cross, Austin & Ireland Lumber Co., Lumber; Luke K. Murphy, Consolidated Edison Co. of New York, Inc., Solid Fuels; Stuart T. Edgerton, U. S. Rubber Co., Paper; Harry F. Barnett, E. I. duPont deNemours & Co., Chemicals; Harold W. Macintosh, L. O. Koven & Bro., Jersey City, N. J., Iron & Steel: George F. Guldner, Worthington Pump & Machinery Corp., Harrison, N. J. Non Ferrous Metals; H. M. Van Cleaf, Whitman Export & Import Co., Textiles.

Dinner Committee, four members, Ernest G. Jaehne, New York Stock Exchange

**Educational Committee** 

Educational Committee, six members, Henry Meyer, General Bronze Corp., Long Island City, N. Y.

Eligibility Committee, three members, John F. Snedeker, Sr., Binney & Smith Company.

Forum Committee, six members, G. W. Howard Ahl, Columbia Ribbon & Carbon Mfg. Co., Flushing, N. Y.

Membership Committee, sixteen members, Merrit A. Cline, Alexander Smith & Sons Carpet Co., Yonkers, N. Y.

Nominating Committee, five members, Harold W. Macintosh, L. O. Koven & Bro., Inc., Jersey City, N. J. Outside Activities Committee, seven

Outside Activities Committee, seven members, Walter M. Hoffmann, American Oil & Supply Company.

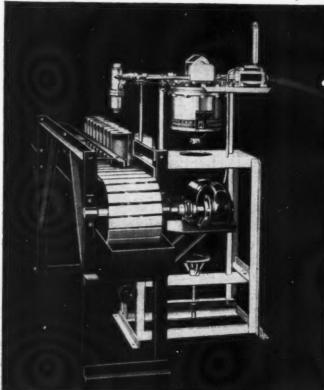
Program Committee, four members, Donald H. Lyons, Johns-Manville Corporation.

Public Relations Committee, five members, Curran Ridout, International Standard Electric Corp.

Reception Committee, five members, Howard M. Van Cleaf, Whitman Export & Import Company.

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# Only the

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# The SIDE Does ALL the GRIPPING That's Why it GETS the WEAR!

One glance at a V-Belt in its sheave shows you that only the sides of the belt touch the pulley. Every ounce of load the V-Belt carries must first be picked up by the sides. The sides do all the gripping—they get all the wear against the sheave groove wall. They pick up the load. They transmit that load to the belt as a whole. Then, once again, the sides—and the sides alone—grip the driven pulley and deliver the power to it.

Naturally, this explains why you have always noticed that the sidewall of the ordinary V-Belt is the part that wears out first.

## \* Now See How the Patented CONCA VE SIDE SAVES Sidewall Wear-Lengthens Belt Life!

Because the life of a V-Belt depends, first of all, on the sidewall, it is clear that anything which prolongs the life of the side-wall will lengthen the life of the belt. The simple diagrams on the right show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the middle of the sides. They show also why the Patented Concave Side greatly reduces sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

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Now that Gates SPECIALIZED Research has resulted in Super V Belts capable of carrying much heavier loads—up to 40% higher horsepower ratings in some cases—the sidewall of the belt is called upon to do even more work in transmitting these heavier loads to the pulley. Naturally, with heavier loading on the sidewall, the life-prolonging Concave Side is more important NOW than ever before!



Straight Sided V-Belt



How Straight Sided V-Belt Buiges When Bending Around Its Pulley



You can actually feel the buiging a straight-sided V-Belt by holding sides between your finger and thu and then bending the belt. Natura this buiging produces excessive walong the middle of the sidewall as it cated by arrows.

Gates V-Belt with Patented Concave Sidewall



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Perfect Fit
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## at your finger-tips!

With JOMAC Industrial Work-Gloves, you've got flexibility right down to your finger-tips! What's more, you've got safety . . . no matter how tough the job!

There's a reason for JoMac's superiority. Its extraordinary fabric is "loop-finished," with hundreds of "aircell" cushions lock-stitched into place. JoMac Industrial Work-Gloves are made for longer wear . . . they give up to 7 times the wear of ordinary work-gloves!

When you look for flexibility, safety and long life in a work-glove, look to Jomac, the work-glove that makes friends with workers and production men alike! For details, write C. Walker Jones Co., 6130 North Lambert Street, Philadelphia 38, Pa. Plants in Philadelphia, Pa., Detroit, Mich., and Warsaw, Ind. Foreign Representatives: Gillespie & Co. of New York, Inc., 96 Wall Street, New York 5, N. Y.

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THREE TYPES OF JOMAC GLOVES

REGULAR INDUSTRIAL TYPE • HEAT- AND FLAME-RESISTING

SAFETY GAUNTLET-CUFFS

#### AL HAYES LEADS CASE HISTORY DISCUSSION AT METROPOLITAN CLUB MEETING

F. Albert Hayes, director of purchasing for Bigelow-Sanford Carpet Co., was guest speaker at the September meeting of the Metropolitan Purchasers' Assistants Club, at New York, on September 9



F Albert Hayes

Mr. Hayes, a past president of the National Association of Purchasing Agents, and for five years chairman of its Committee on Education, used a case history from a booklet prepared by Prof. H. T. Lewis for the committee, as a basis for the discussion, which was conducted on an informal plane.

The talk provoked lively discussion from the floor for and against various aspects of the case. Mr. Hayes offered his own general opinion that a limited committee meeting within a plant was a worthwhile project for a purchasing agent to work toward, and that in any case much depends on the personality of the purchasing agent himself, whether he is capable of "selling himself and his job". He added that in addition to maintaining the best relations with outside contacts, the purchasing agent must see that his relationship with his fellow workers inside the organization are just as good. He stated that he wished to impress the group with their responsibility to the public in doing their joh well to bring down the cost of materials and production. He pointed out that the task is a great burden, but also a great challenge.

A surprise guest of the evening was Joseph W. Nicholson, City Purchasing Agent, Milwaukee, Wis-, and a past president of the national association. Mr. Nicholson spoke briefly and informally on some of the procedures and problems of his office. He also invited the group to attend the sessions of the National Institute of Governmental Purchasing convention then in progress in New York.

Committee chairman named by the group for the coming year are: C.R. Bogden, Sun Chemical Co., membership; John Sharkey, Culbert Pipe & Fittings Co., publicity; J.S. Babiy, Adams Laboratories, education; G. J. Riviera, Aluminum Co. of America, plant visit; Robert A. Schmidbauer, Prudential Insurance Co., lecture; Herbert Helmers, South American Development Co., entertainment; George L. Stapleton, Whitman Export & Import Corp., editorial.



Want to aim your packaging line in a beeline toward a buyer's market?

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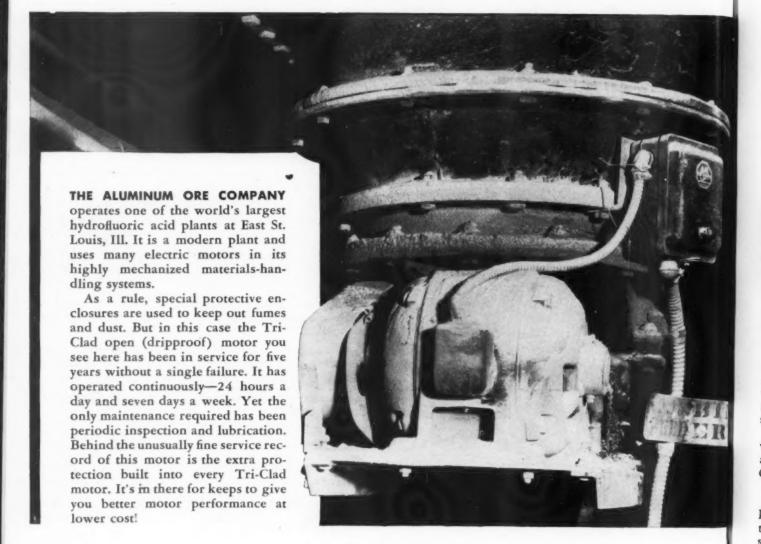
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• A rotating labyrinth seal which further protects the motor interior from damage by foreign matter.

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To date, a million and a half Tri-Clad motors, with a total output of over 4-million horsepower, have been purchased by American industry!

In every kind of plant from steel mill to dairy, these motors are proof beyond doubt that you can't beat Tri-Clad extra protection for tough motor applications. Even on jobs where special protective enclosures would ordinarily have been specified, Tri-Clad open motors, applied during the war years, have stood up to heat, dust, and dampness, operating smoothly and efficiently for years with only minimum maintenance.

Today, the Tri-Clad family includes many different types and sizes. But whatever your selection, the Tri-Clad motor nameplate is still your best assurance of a high return on your motor dollar. Apparatus Department, General Electric Company, Schenectady 5, N. Y.

#### EXTRA PROTECTION . . . AGAINST PHYSICAL DAMAGE!

Rigid cast-iron frame and end shields protect vital motor parts from external abuse. Because they're not at the mercy of a coat of paint, they strongly resist chemical attack and dampness. Cast iron also gives you wide nonyielding metal fits between end shields and frame for ease of assembly.

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Motor windings of Formex\* wire, together with improved insulating materials, reduce the chances of electrical failure. Heat is dissipated quickly—motor stays young for years and years!

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#### TALK ON PRISON INMATES MEMPHIS MEETING

Guest speakers featured at a meeting of the Memphis Association of Purchasing Agents recently at the Hotel Gayoso were O. P. Caldwell, superintendent of Fort Pillow Prison Farm, and Prof. C. S. Brown of Memphis State. Mr. Caldwell spoke on "Rehabilitation of Prison Inmates" Prof. Brown continued his series of lectures on economics.



Martin Sunderland Memphis President

New members presented were: W. E. Land, Dyke Bros., Little Rock, Ark.; Raymond P. Durick, Coats-Moore Supply Co., Memphis. Also six prospective members were guests.

W. E. Rier, 7th District vice-president, announced that Garnet T. Dickson, president of the National Association of Purchasing Agents would be the guest speaker at the October meeting.

#### WESTERN MASS, ASSOCIATION HOLDS ANNUAL CLAMBAKE

1 1 1

The annual clambake of the Purchasing Agents Association of Western Massachusetts was held on Thursday, August 21, at Turner Park, Springfield. Chet Jersey of Stacy Supply, assisted by Don Sistaire of Wico Electric Co., was chairman of the affair.

Highlighting the day was a ball game between the purchasing agents and a team made up of outstanding salesmen from the Western Massachusetts area. Other athletic contests and games were also held. The general committee was made up of Ed Armstrong, John Dono-van, Jim Harrington, Jim Sinclair, Jake Tribelhorn, Frank Phillips, Lee Costigan and Charles Healey.

#### MONTREAL ASSOCIATION HOLDS DINNER MEETING

The first dinner meeting of the Purchasing Agents Association of Montreal for the 1947-48 season was held on September 16 at Vernon Cardy Hall. Mount Royal Hotel. Frank G. Rice, of the plastics division, Canadian Industries Ltd., spoke on "Plastics, The Shape of Things to Come." He put on display a wide range of samples illustrative of the new uses to which plastics are being put.

The regular "research clinic" was held (Please turn to page 244)

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One of our sales engineers will be pleased to assist you in comparing the costs of our materials and methods of application with conventional types.

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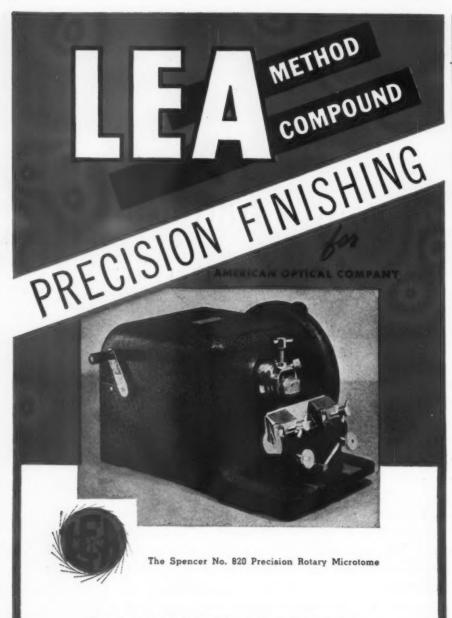
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Surring, Buffing and Polishing... Manufacturers and Specialists in the Development of Production Methods and Compositions

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(Continued from page 242)

before the meeting, and was devoted to a general discussion.

On September 18, the association held a golf party at the Bonniebrook Golf Club. Facilities of the club were obtained through the kindness of member Andre Rolland. Dinner was held in the evening. Alan S. Potter, entertainment committee chairman, and Mr. Rolland were in charge of arrangements.

## UNIVERSITY PURCHASING COURSE SPONSORED BY MILWAUKEE ASSN.

1 1 1

The Milwaukee Association of Purchasing Agents has announced that it is again sponsoring a course in Industrial Purchasing in cooperation with the officials of Marquette University. The course, held every Thursday evening from 7:30 to 9:20 in the college of business administration, is under the direct supervision of Jos. W. Nicholson, City Purchasing Agent, City of Milwaukee, assisted by Prof. Geo. W. Knick of the Marquette faculty.

The members of the association's educational committee, who will act as guest lecturers, presenting purchasing problems based on practical experiences are: R. W. Brick, W. L. Boyd, L. C. Stilp, F. E. Haker, G. L. Hartman, T. H. Schultheis, C. E. Stone, G. T. Scully, F. F. Steffen and L. F. Whisler.

The university has widely publicized the course, describing it as of interest "not only to purchasing department employees, but to expediters, store men, bookkeepers, production workers and those who want to broaden their working knowledge of the executive functioning of business. This is a real opportunity to learn from those who have been 'through the mill.'

The university allows two hours credit for each semester.

# TWIN CITY ASSOCIATION HEARS TALK ON ELECTRONICS

The Twin City Association of Purchasing Agents opened another season with a meeting at the Minneapolis Athletic Club on Wednesday, September 10. Gordon Volkenant, Associate Director of Research for the Minneapolis Honeywell Regulator Company, was the principal speaker of the evening, choosing as a subject "Gadgets, Gimmicks and Electronics".

Prior to the meeting a film entitled "Acme Tag Company's Plant Operations" was shown.

# FORT WORTH ASSOCIATION HOLDS STAG PARTY

The Purchasing Agents Association of Fort Worth held a stag party at the Meadowbrook Country Club on Saturday, September 6. The party started at noon and featured golf, horseshoe pitching, croquet and other sports. A supper was held in the evening.

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#### EASTERN NEW YORK COMBINES PLANT VISIT AND MEETING

The Purchasing Agents Association of Eastern New York held a combined plant visit and meeting at the plant of the Bigelow-Sanford Carpet Co., Inc., Amsterdam, N. Y. on September 18.

The members were shown a display entitled "Fleece to Floor" on their arrival at the plant, and after a preparatory talk were conducted through the company's mill. Following the plant inspection there was a cocktail hour and a dinner in the plant cafeteria.

Special guests at the meeting were Howard T. Lewis, Professor of Marketing, Graduate School of Business Administration, Harvard University; George A. Renard, National Secretary, and F Albert Hayes, Director of Purchases for the company, and a past president of the national association. Commodity reports on iron and steel, non-ferrous metals and scrap and fuel oil were given.

The plant visit and meeting were held through the courtesy of Mr. Hayes and Oakley S. Cooper.

#### 1 1 1 TRI-STATE ASSOCIATION HOLDS PLANT VISIT AND MEETING

The Tri-State Purchasing Agents Association held its regular meeting at the Prichard Hotel, Huntington, W. Tuesday, September 16. The meeting followed a plant visit by the group in the afternoon to the West Virginia Steel and Manufacturing Company. Borge Rosing, vice-president of the company, spoke at the evening session on "What Are We Doing Tomorrow".

#### ARMY OFFICER SPEAKS AT NEW ORLEANS ASSOCIATION

1 1 1

Colonel Roland P. Shugg, commanding officer of the New Orleans Port of Embarkation was the guest speaker at the regular monthly meeting of the Purchasing Agents Association of New Orleans, held September 8 at the Jung Hotel. Colonel Shugg spoke on "The New Orleans Port of Embarkation-Its Present Mission and Future Prospects", outlining the important part the port plays in the commerce and general welfare of the city. Robert W. Elsasser, noted economist, who will be a regular feature at all meetings, also spoke.

#### "RESPONSIBILITY OF BUYER AND SELLER" AT TRI-CITY ASSN.

An open discussion on "The Mutual Responsibility of Buyer and Seller" featured the first meeting of the 1947-48 season of the Tri-City Association of Purchasing Agents held September 9 at the American Legion Club rooms, Rock Island, Ill. C. J. Kalbfell, district manager of the Scovill Manufacturing Co., Chicago, was the chief speaker and led the discussion.

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Walworth manufactures a complete line of valves and pipe fittings for ALL major services in principal industries. All Walworth products are made to the highest standards of quality, both as to dimensional accuracy and metallurgical properties. In design, construction, and performance, they reflect Walworth's 105 years of "know how" in the manufacture of quality valves and fittings.

Your Walworth distributor will give you full information on the complete line of Walworth steel, iron, and bronze valves, and pipe fittings; also Walworth Lubricated Plug Valves, and Walseal\* valves, fittings and flanges. Ask for this information \*Patented-Reg. U. S. Pat. Off. today.

## WALWORTH valves and fittings 60 EAST 42nd STREET, NEW YORK 17, N. Y.

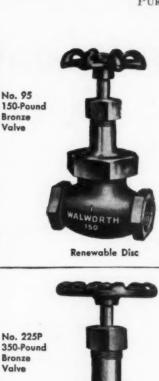
DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

Seal

Steel



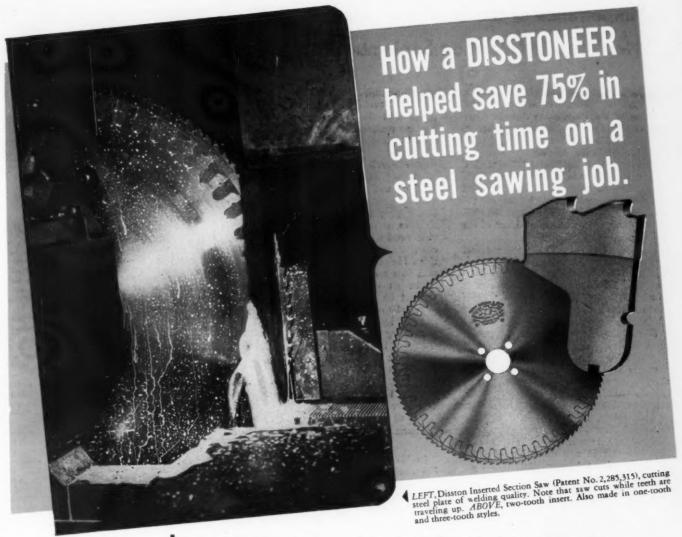












electrical manufacturing company where many tests had been made with segmental-type circular saws of various makes. Results showed that the saw recommended by the Disstoneer\* outproduced all others by a wide margin. An engineer of the company writes:

"In one of our recent tests on cutting 1" x 12" steel plate of welding quality—using a 30" diameter, 120-tooth, segmental-type saw—the time was 2 minutes and 55 seconds. With a Disston Inserted-Section High Speed Steel Metal-Cutting Saw, the same pitch and

diameter, we reduced the time to 45 seconds."

This saw, which is illustrated here, is made in all standard sizes, with inserts ranging from a single tooth to three. Inserts are held securely in place, eliminating up and down and lateral movement and can be quickly and easily replaced.

\*Disston leadership and sound engineering knowledge, to find the right tool for you—to cut wood, to cut metal and other materials—and TO CUT YOUR COST OF PRODUCTION—not only on special work but on ordinary jobs as well.





Reinforced type for heavy-duty high speed outling.

HARDENED THROUGHOUT for high speed cutting of non-ferrous metals, plastics and many other materials. Made with Regular and Reinforced teeth in all standard dimensions. Also recommended for friction cutting of ferrous metals at speeds of not less than 12,000 f.p.m.



set by machine.
Regular and Buttre
Supplied cut to ma
and joined ready for
in 100-foot coils;
½" wide are packed
Disston Safety Rec

HARD EDGE FLEXIBLE BACK, blades which are hardened on tooth edge only, for operating at low speeds. Teeth are milled (not punched) and accurately set by machine. Made with Regular and Buttress type teeth. Supplied cut to machine length, and joined ready for use... also in 100-foot coils; sizes ½" to ½" wide are packed in the handy Disston Safety Reel.

HENRY DISSTON & SONS, INC. 1033 Tacony, Philadelphia 35, Pa., U.S.A.

# "Importance of the Interview" Discussed At New York Association September Meeting

"The Importance of the Interview" was the topic of discussion at the regular meeting of the Purchasing Agents Association of New York, held September 16 at the Builders' Exchange Club. Discussion leaders were Walter E. Cummin, purchasing agent for White Laboratories, Inc. and Jim Ferris, assistant sales manager, Niagara Alkali Co. and president of the Salesmen's Association of the American Chemical Industry. G. W. Howard Ahl, second vice-president of the association, presided.

Guest speaker at the dinner meeting was Don Francisco, vice-president of J. Walter Thompson Company, whose subject was "Does Distribution Cost Too Much?" A report on eight key commodities was given by William E. Duryea on data furnished by members.

Declaring that the purchasing agent must be ready to do "time and a half purchasing" to do his job right, Mr. Cummin said that he did not favor earmarking or allocating any particular time of any particular day to interviewing salesmen. He stated that he favored a flexible policy, depending on many factors, including his own available time, the distance traveled by the salesman, etc., but that in any case the salesman should be informed immediately how long he would have to wait before being seen.

#### Invited Guests

"Salesmen are really our invited guests", he said, "we need them and we should treat them with consideration." He added that he was talking about "real" salesmen, the men who know their products and have something substantial to offer, not the type that drops in because he happens to be in the neighborhood. He called for courteous treatment

of salesmen, allowing them plenty of time to develop their presentation. He added that the purchasing agent should have an outline of procedure to guide him so that he can control the interview at all times.

Mr. Ferris stated that the average salesman today is an educated man, theoretically and practically well acquainted with his product and its potentialities, and that buying and selling today is a relationship in which knowledge, ideas, service, good will and dependability are exchanged to the mutual benefit of both sides. He pointed out that while the salesman does not expect the purchasing agent to be an outstanding expert in every product he does feel that he should be qualified to hold up his end of that relationship in an intelligent manner. If the purchasing agent feels that the subject is beyond him, Mr. Ferris said, he should not object to the salesman introducing a third party, as long as it is understood that this is not an overhead approach. He said that essentially buyer and salesman were the same, the purchasing agent being 49 per cent "yes man" and the salesman being 51 per cent "yes man".

#### Lowering Unit Costs

In his talk following the dinner, Mr. Francisco told the association members that business men must realize that the ultimate cost of a product to the consumer is far more important than the ratio between production and distribution expenses. "Paradoxically", he said, "the way to lower the costs of distribution, as well as production is sometimes to spend more. Very often if you promote your product harder you sell enough more to reduce the unit cost of distribution."

#### UTAH ASSOCIATION HOLDS REGULAR MEETING

The regular monthly meeting of the Purchasing Agents Association of Utah was held on Thursday, September 18. S. W. Mote, general chairman of the committee arranging the Tri-Association Fall Conference at the end of October, presented an outline of the conference program.

### PITTSBURGH ASSOCIATION HEARS TALK ON STEEL MANUFACTURE

The opening fall meeting of the Purchasing Agents Association was held Tuesday, September 16 at Hotel William Penn. Featured speaker of the evening was R. N. McGee, special sales representative of Jones & Laughlin Steel Corporation, whose subject was "Steel Manufacture: A Film Talk on Men and

Steel". Mr. McGee, who has addressed thousands of students, technicians and executives from coast to coast, took his audience on a film trip through all phases of the industry.

The regular October meeting of the association has been put forward to October 7, so that Garnet T. Dickson, National President, who will be in the Sixth District at that time, may meet with the group.

## RHODE ISLAND ASSOCIATION HEARS INDUSTRIAL LEADER

The Rhode Island Purchasing Agents Association held its regular meeting on September 22 at the Metacomet Golf Club, William Leavitt Stoddard, president of the New England Industrial Development Corporation, Boston, Mass., was guest speaker, and had as his subject "Getting It Made In New England."



#### INDUSTRIAL JOBBERS

COLORADO: M. L. Foss, Inc., 1901 Arapahoe St., Denver. CONNECTICUT: C. S. Mersick & Co., 260 State St., New Haven. ILLINOIS: Supplies, Inc., 564 West Adams Street, Chicago; Globe Machinery & Supply Co., 617 Fifteenth St., Moline. INDIANA: The Central Rubber & Supply Co., 120 South Meri-IOWA: Globe Machinery & dian St., Indianapolis. Supply Co., 205 Third Ave., S. W., Cedar Rapids; Globe Machinery & Supply Co., East First St. & Court Ave., Des Moines. KENTUCKY: Neill-LaVielle Supply Co., Inc., 505 West Main St., Louisville. MARYLAND: Carey Machinery & Supply Co., 119
East Lombard St., Baltimore. MASSACHUSETTS: Chandler & Farquhar Co., 900 Commonwealth Ave., Boston; J. Russell & Co., Inc., 361 Dwight St., Holyoke; Brierly, Lombard & Co., Inc., 107 Foster St., Worcester. MICHIGAN: The Charles A. Stre-linger Co., 149 East Larned St., Detroit. MINNE-SOTA: Kelley-How-Thompson Co., 309 South Fifth Ave., Duluth; Kulseth Supply Co., 117 Washington Ave., Fargus Falls; Minneapolis Iron Store, 524 North Washington, Minneapolis; Uptown Iron Store, 918 West Lake St., Minneapolis; Berg Supply Co., Willmar. MISSOURI: The Faeth Co., 1608 McGee St., Kansas City. MONTANA: Kelley-How-Thompson Co., Billings. NEW JERSEY: Brodhead-Murphy Co., 525 West Grand St., Elizabeth. NEW YORK: Beals, McCarthy & Rogers, Inc., 80 Terrace, Buffalo; A. N. Nelson, Inc., 370 Hamilton Ave., Brooklyn; Keystone Nut & Bolt Co., 62 Murray St., New York City; Syracuse Supply Co., 314 West Payette St., Syracuse NORTH DAKOTA: Empire Supply Co., Fargo; Minot Supply Co., Minot; Grand Forks Supply Co., Grand Forks. OHIO: The E. A. Kinsey Co., 331 Fourth St., West Cincinnati; Strong, Carlisle & Hammond Co., West Cincinnati; Strong, Carlisle & Hammond Co., 1392 West 3rd St., Cleveland; The Smith Brothers Hardware Co., 580 North Fourth St., Columbus; The M. D. Larkin Co., 115 East Third St., Dayton; Mill & Factory Supply Co., 622 Southard St., Toledo. PENNSYLVANIA: Emco Supply Co., Lansford; Standard Shannon Supply Co., 13 Letitia St., Philadelphia; Somers, Pitler & Todd Co., 327 Water St., Pittsburgh; E. Keeler Co., 238 West St., Williamsport. RHODE ISLAND: The Congdon & Carpenter Co., 405 Promenade St., Providence. SOUTH CAROLINA: RHODE ISLAND: The Congdon & Carpenter Co., 405
Promenade St., Providence. SOUTH CAROLINA:
Taylor Parker Co., Florence. SOUTH DAKOTA:
Aberdeen Supply Co., Aberdeen: Cave Supply Co.,
Watertown. TEXAS: Peden Iron & Steel Co., 700
North San Jacinto St., Houston. VIRGINIA: Taylor
Parker Co., Inc., 47 Commercial Place, Norfolk;
Taylor Parker Co., Inc., 801 East Carey St., Richmond. WASHINGTON: Northwest Nut & Bolt Co.,

\*\*Son Pourteenth Ave. N. W. Seattle, WEST VIR\*\*Son Pourteenth Ave. N. W. Seattle, W. Seat 4502 Fourteenth Ave., N. W., Seattle. WEST VIRGINIA: Superior Sterling Co., 200 Bluefield Ave., Bluefield. WISCONSIN: John Pritzlaff Hardware Co., 333 North Plankinton Ave., Milwaukee.

#### SALES OFFICES AND SALES ENGINEERS

A. K. Whitaker. 4076 Powers Ferry Rd., N.W., ATLANTA, Ga.; 20 North Wacker Drive, CHICAGO. Ill.; 1836 Euclid Ave., CLEYELAND, Ohio; 522 New Center Bids., DETROIT, Mich.; R. G. Brandes, 1205 Milford St., HOUSTON, Tex.; Collins-Powell Co., 2947 Alden Dr., Beverly Hills, LOS ANGELES, Cali.; 115 Broadway, NEW YORK CITY; H. J. Forst, 225 Catalpa Place, PITTSBURGH, Pa.; 2330 Vauxhall Rd., UNION, N. J. In CANADA: A. J. Campbell & Co., Box 430 (Place d'Armes), Montreal.

The ESNA advertisement shown opposite this column explains the dependable protection provided by all types of Elastic Stop Nuts.

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# ULTIPLE Fastener Frotection PLUS ASSEMBLY LINE ECONOMIES

AT THESE POINTS:

1-Body-Hold-Down

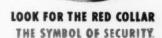


## —with the Self-Locking, Self-Sealing and Reusable Red Elastic Collar

Willys-Overland's new 'JEEP' Station Wagon has a world-wide reputation for stamina, performance and economy. So here again, self-locking ESNA Elastic Stop Nuts have been applied at six tough detachable fastener assembly points to lock out body squeaks and rattles ... maintain alignments...permit easy removal and replacement for servicing. And further, to reduce assembly line costs with a one-piece, self-locking fastener that can be quickly run-on with a

All ESNA Elastic Stop Nuts-with the self-locking, self-sealing and reusable Red Elastic Collar-provide dependable protection against Vibration, Impact and Stress Reversal in both prestressed and positioned settings.

In addition, they protect against Thread Corrosion, Thread Failure and Liquid Seepage. This multiple protection helps achieve the double economy of inventory simplification and reduced procurement costs. ESNA engineers are ready to study your fastener problems. Address: Elastic Stop Nut Corporation of America, Union, New Jersey. Sales Engineers and Distributors are conveniently located in many principal cities.



It is threadless and dependably elastic. Every bolt—regardless of commercial tolerances—impresses (does not cut) its full thread contact in the Red Elastic Collar to fully grip the bolt threads. In addition, this threading action properly seats the metal threads—and eliminates all axial play between bolt and nut.

All ESNA Elastic Stop Nuts-regardless of size or type-lock in position anywhere on a bolt or stud. Vibration, impact or stress reversal cannot disturb prestressed or positioned settings.

# ELASTIC STOP











ESNA





ODUCTS OF: ELASTIC STOP NUT CORPORATION OF AMERICA

### for the latest ideas in packaging . . . "call Cleveland"



## ... from any angle instantly justify their use!

THE WEATHERHEAD COMPANY of Cleveland adds this extra protection to their products in transit, at practically no cost per unit.

Besides giving further identification to this world-famous family of fittings . . . CLEVELAND CONTAINER SLEEVES, CAPS and PLUGS spotlight the extra care given before shipment by manufacturers to make their products easier and faster to pack and handle en route from production to installation.



Protect against damage to threads. Plugs for internal threads; Sleeves and Caps for external threads.

Cleveland Container Plugs and Sleeves in diameters 1/8" up; Caps from 1/4" up.

Protect against dust and dirt; against damage in dipping or

Special sizes and shapes without extra die charge where quantities warrant.

ATTRACTIVE PRICES QUICK DELIVERIES CONSULT OUR ENGINEERING DEPT.



#### FORMER LEGISLATOR SPEAKER AT CONNECTICUT ASSOCIATION

Joseph E. Talbot, former congressman, was the guest speaker at the first fall meeting of the Purchasing Agents Association of Connecticut, held September 18 at the Waterbury Country Club. His topic was "Legislation-Now and in the Future." Golfing was held early in the afternoon and the commodity group discussion was held just before the dinner

#### TOLEDO ASSOCIATION SEES FILMS ON TRANSPORTATION

1 1 1

The first fall dinner meeting of the Purchasing Agents Association of Toledo was held on Thursday, September 18, at the Toledo Yacht Club. E. P. McMahon, of the Automatic Transportation Company, showed the group two new films, "Pay Loads Pay Off" and "Skylift Newsreel".

#### FILM ON COPPER SHOWN AT MILWAUKEE ASSOCIATION

The Milwaukee Association of Purchasing Agents held its regular monthly meeting on September 9 at the Milwaukee Elks Club. The feature of the evening was a film entitled "Copper and Its Alloys", shown by F.J. Geisler of Revere Brass & Copper Company. R.H. Buck, general sales manager, gave a brief talk after the film, and John Reese, technical advisor, answered questions from the members. The pre-meeting commodity discussion, arranged by Cliff Dawley and Charles Jackson, was well attended.

#### CLEVELAND ASSOCIATION HAS FATHERS AND SONS BANQUET

The Purchasing Agents Association of Cleveland held its annual Fathers-and-Sons Banquet at the Hotel Cleveland on September 18 George L. Boston, noted mental telepathist, headed the entertainment program.

The annual baseball party of the group was held at the Cleveland stadium on Thursday evening, August 21, when the Cleveland Indians played the New York Yankees.

#### 1 1 1 WASHINGTON ASSOCIATION HOLDS FIRST FALL MEETING

The Purchasing Agents Association of Washington heard officials of the State of Washington discuss game and fisheries activities in the state at the first fall meeting, held September 11 at Seattle. John Biggs, assistant State Director of Game and A. Anderson, assistant State Director of Fisheries were the featured speakers, and both supplemented their talks with movies.

(Please turn to page 254)

# Soft...tough...

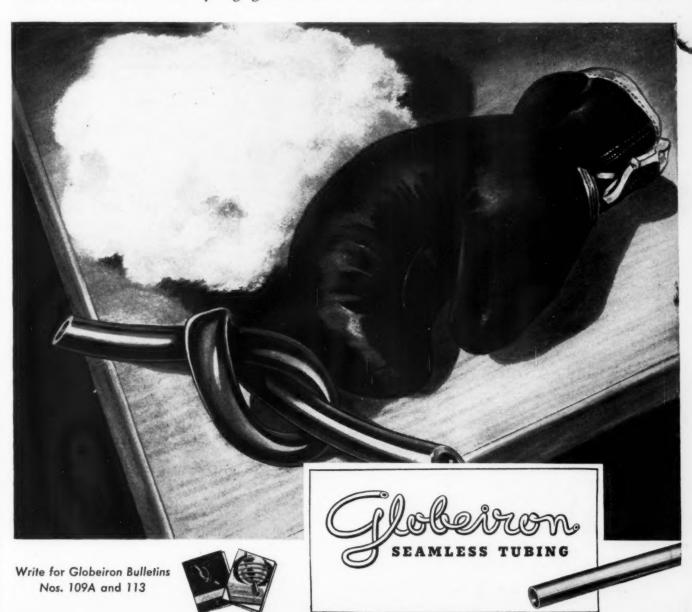
SOFT...tough...ductile — that's Globeiron high purity ingot iron seamless tubing. Tubing that's ideal for severe forming operations—cold or hot. Its metal structure is uniquely uniform — almost pure ferrite. Its magnetic permeability is almost that of pure iron. You can weld it with any common method — no pre-heating or other precautions are necessary.

Globeiron is superior to many steels in corrosion resistance — in any applications wherever corrosive attack is accelerated by segregations and

impurities in steels. It may be hot-worked in any temperature range without becoming brittle. Pressure tube requirements, where uniformity, ductility and purity of metal are essential, can best be met with Globeiron seamless tubing.

Globeiron is a product of Globe Steel Tubes Co. — a specialized, dependable manufacturing source for seamless tubing in carbon, alloy, stainless steels, and Gloweld welded stainless steel tubing.

Globe Steel Tubes Co. . Milwaukee 4, Wisconsin.

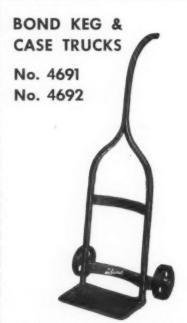


# Keep Your Materials Swiftly on the Move with

Bond Hand Trucks are the short cut to speedy, easy handling. They assure an unimpeded flow of materials to every point in your plant—keep your costs low. You can rely on a Bond to deliver the goods because Bond products have been noted for sound engineering for more than half a century. When you buy materials handling equipment, it pays to look for the Bond trademark. If it's a Bond, it's an asset.

BOND HI-BOY UTILITY TRUCK No. 5005

You can pile your loads up to the top of the Bond Hi-Boy. Sturdy, light, easy to maneuver, it is particularly suitable for handling cases of beverages, cartons, cans and similar articles. Plain bearing or roller bearing solid rubber cushion tread wheels. Plain bearing wheels have self-lubricating bushings.



No. 4691 is the truck with a thousand uses. No. 4692 is equipped with specially designed wheel guards for handling bags. Both of these husky, top notch trucks are made of 1" square high carbon steel tubing. Both are available with the following type wheels: plain or roller bearing semi-steel; plain or roller bearing vulcanized-on rubber.

#### BOND UNIVERSAL LIFT JACK



You simplify handling of light and heavy loads with the Bond Universal Lift Jack. It is suitable for factory, foundry, terminal, loading dock, elevator or store. This jack is a cinch to operate. It couples and uncouples quickly, turns rapidly. Handle adjusts to operator's height. In close quarters, the Bond Universal Lift Jack is conveniently operated with handle in vertical position. You may store it upright in narrow areas. Safe—it won't drop and hit floor or lie underfoot and cause accidents.

Send for free folders describing in detail Bond Hand Trucks and Lift Jacks

Bond Foundry & Machine Co., Manheim, Pa.

(Continued from page 252)

Arthur Erickson, chairman of the discussion committee, presented a discussion of the "Black Ball Ferry Situation" led by John Ross, Sweden Freezer Co. and George Neil, U. S. Naval Air Station.

An educational forum was held at 4.30 p.m., preceding the dinner, with Dr. T. J. Bernowe, professor of Personnel Management, College of Business Administration, University of Washington, presenting the subject, "Personal Relations and Practical Business Psychology". A discussion period followed, with Harold D. Mitchell, chairman of the educational committee, as leader.

The evening's program was arranged by Vice President Kenneth A. Knudson and Frank Pokswin. President S. E. Ringheim was chairman.

# PLANT VISIT FEATURES FIRST

The first meeting of the 1947-48 season of the Purchasing Agents Association of Toronto, September 10, featured a plant visit to the Colgate-Palmolive-Peet Company Ltd. Following the visit, which was arranged through Carl Lougheed by Fred Waghorne, chairman of the committee on plant visits and transportation, a dinner was held at the Royal York Hotel, with the officials of the company as guests. C. R. Vint, president and general manager of the company, addressed the gathering on "Advertising and What It Can Do for You".

#### MANAGEMENT-PURCHASING AGENTS MEETING FOR CAROLINAS-VA.

1 1 1

The regular meeting of the Carolinas-Virginia Purchasing Agents Association was held at the Sedgefield Inn, Greensboro, N. C. on September 19 and 20. The affair was designated as a Management-Purchasing Agents meeting, and many company executives attended.

Roy C. Haberkern was in charge of the forum session on Friday afternoon, and George A. Renard, National Secretary, spoke at the Saturday morning meeting. The annual golf tournament of the association was held at the Sedgefield country club on Saturday afternoon.

## LOUISVILLE ASSOCIATION HOLDS OUTING

The last summer outing of the Purchasing Agents Association of Louisville was held at Rockford Gardens on August 1. Eighty-five were in attendance.

One of the highlights of the party was a softball game between a team of buyers headed by Elmer Meyer, the B F. Avery Co., and a team of salesmen headed by Robert L. Schmitt, R. L. Schmitt Co. Other members entertained themselves with horseshoe pitching contests and dart howling. C. S. Schardein, chairman of the entertainment committee, handled the arrangements.



TRADEMARK REG. U. S. PAT, OFF,

WORK-ABLE HANDS

Production by trained nimble fingers can be kept high by the use of a good granulated skin cleanser which will not cause papery dryness, stiffness, chapping and irritation, and which will help to prevent crippling dermatitis. \* \* You need not guess about which granulated skin cleanser to buy. PAXLANOSAV\* HEAVY DUTY, the aristocrat of the field, has the approval of the American Medical Association for advertising in their medical journals. Similarly, PAX HYSPEED,\* which also has national acceptance, easily tops the list of skin cleansers without emollients because of its quality, safety, thrifty bulk and extra efficiency.

# It Costs You Less To Use The Best!

\*Tradenames of G. H. Packwood Mfg. Co.

When you purchase any Pax Product you also purchase the experience and ability of Pax Technicians acquired through 21 years of exhaustive research and development. G. H. PACKWOOD MANUFACTURING CO.

1545-55 Tower Grove Avenue St. Louis 10, Missouri

The use of PAX SULPHONATED OIL SKIN CLEANSER may be indicated for only those workers whose occupations sensitize and cause severe defatting and irritation of the skin. It is not recommended as a substitute for PAX NEUTRALIZED GRANULATED SKIN CLEANSERS which should be used to thoroughly cleanse the skin.



# Cut costs on your heavy-duty cleaning!

Do your cleaning with the new G-E Industrial-Commercial Vacuum Cleaner



Put General Electric's fast-working new vacuum cleaner to work . . . lowering costs.

G. E. has engineered this machine to give you thorough cleaning—it picks up dirt, dust, and litter quickly and easily.

It's so thorough, that floors, carpeting, and linoleum are protected and preserved—actually *last longer*.

Depend on the sturdy General Electric motor for smooth performance, long life and reliability. Every machine backed by company warranty.

As for operation—this machine can be put into use by one person with no previous training.

General Electric provides you with all the specially designed tools to handle your individual cleaning problems.

Two models available: (1) Combination wet and dry pickup. (2) Dry pickup. For further details, mail coupon below. General Electric Company, Bridgeport 2, Conn.

FAST . EFFICIENT . QUIET . ECONOMICAL

The New General Electric

# Industrial-Commercial Vacuum Cleaner GENERAL & ELECTRIC

	A & M Department, General Electric Company, Bridgeport 2, Conn.  Sirs: Send me descriptive literature concerning the  ( ) Combination Wet and Dry Pickup Vacuum Cleaner ( ) Dry Pickup Vacuum Cleaner
	NAME OF INDIVIDUAL
	NAME OF FIRM
	ADDRESS
	CITYSTATE
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#### BUSINESS TRENDS ANALYZED AT AKRON MEETING

The Purchasing Agents Association of Akron held its first meeting of the fall season on September 16, at the Woman's City Club. The guest speaker was Russell Weisman, business analyst for the Cleveland Plain Dealer, who spoke on current business trends.

The program committee stated that a special announcement would shortly be forthcoming on the annual visit in October of Garnet T. Dickson, president of the National Association of Purchasing Agents.

#### NEWBERRY SPEAKS ON SOUTHWEST CONFERENCE AT TULSA MEETING

Ben Newberry, general chairman of the Southwest Purchasing Conference (to be held October 2 and 3) discussed conference matters at a closed meeting of the Purchasing Agents Association of Tulsa on September 9. Baker Oil Tools, Inc., through the courtesy of Ted Sutter, vice-president and general manager, Los Angeles, and the cooperation of R C. Glover, district representative, played host to the gathering following an annual custom established more than a decade ago.

#### LIGHTING EXPOSITION TO BE HELD IN CHICAGO

The Second International Lighting Exposition and Conference sponsored by the Industrial and Commercial Lighting Equipment Section of the National Electrical Manufacturers Association, will be held at the Stevens Hotel, Chicago, Ill., November 3-7. Address of the exposition headquarters is 111 W. Jackson Boulevard, Chicago, Ill.

#### NATIONAL TOOL & DIE ASSOCIATION ANNUAL MEETING

The 1947 Annual meeting of the National Tool & Die Manufacturers Association will be held on November 2-5 at The Benjamin Franklin Hotel, Philadelphia. Arrangements are in the hands of George S. Eaton, executive secretary of the association, Cleveland, and Adolph E. Berdick, Engineering Tool Co., Philadelphia, who is chairman of the convention committee.

#### BOOKLET ON USING MOUNTED WHEELS ON PORTABLE GRINDERS

Practical methods for increasing production, improving workmanship and reducing costs with light portable grinding equipment are described in "Mounted Wheels", the new 32-page illustrated handbook published by the Carborundum Company.

The wide range of wheel shapes and sizes, the variety of abrasives and coated

(Please turn to page 258)

STAINLESS CROLOYS

8 &W ALLOYS

SAE ALLOYS

NE ALLOYS

SPECIAL ANALYSES

CARBON STEELS

COLO DRAWN

HOT FINISHED

SEAMLESS

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# TUBES for ALL PROCESS NEEDS

# ...all from ONE SOURCE

FINDING the right tubing — Seamless or Welded — for any process application is a simple problem when your requirements are put up to B&W. The variety of tubing made by B&W embraces the widest range or analyses available from one source. So no matter what kind you need from plain carbon to high alloy tubes including a full range of ferritic and austenitic stainless steel grades — B&W makes it.

You can therefore call on B&W for tubes for any combination of operating conditions from the ordinary to the severest with respect to corrosion, oxidation, creep strength, high or low temperatures . . . for application in any plant production operation and for vital parts of production equipment.

TA-1377G



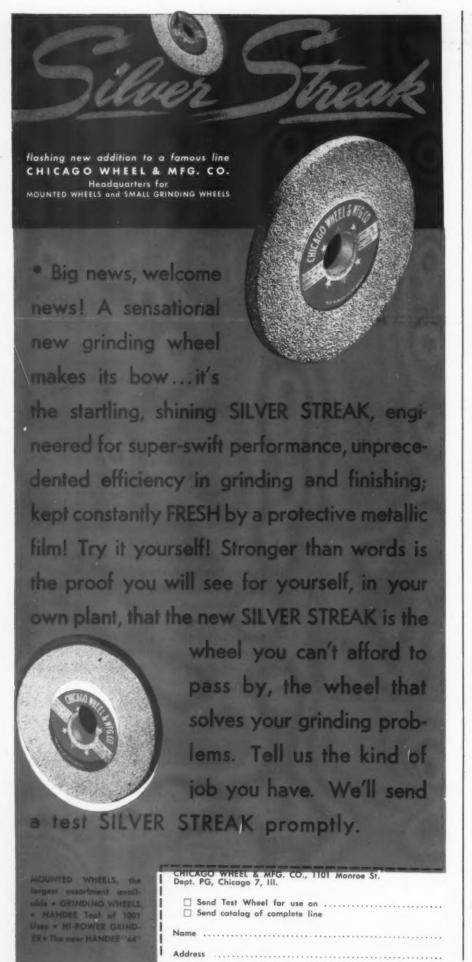
Seamless and Welded Tubular Products in a full range of Carbon, Allay, and Stainless Steels for All Pressure and Mechanical Applications.

Other B&W Products

THE BABCOCK & WILCOX CO. 85 LIBERTY STREET - NEW YORK 6, N. Y.

Stationary and Marine Boilers . . . Boiler Components . . Pulverizers . . . Fuel Burning Equipment . . . Refractories . . . Chemical Recovery Units . . . Process Equipment . . . . Allay Castings.





(Continued from page 256)

abrasive discs, sleeves and cartridge rolls available for use on light-weight, high-speed portable grinders are discussed and depicted. Photographs and diagrams are used in the booklet to provide correct identification and selection, to illustrate careful handling and storing and to show proper and efficient applications. The booklet explains how best results may be attained by users of light, high-speed machines for all types of grinding.

Copies may be obtained from Carborundum representatives or by writing the Carborundum Company, Niagara Falls, N. Y.

#### FIRST STAMP VENDING MACHINES TO APPEAR IN POST OFFICES

Post offices in the larger cities in the country will soon be equipped with coinoperated, automatic, stamp vending machines that will sell stamps at post office
prices. Post office patrons will be spared
the delay of standing in line during rush
hours, and stamps may be purchased at
any hour of the day or night or on
Sundays and holidays.

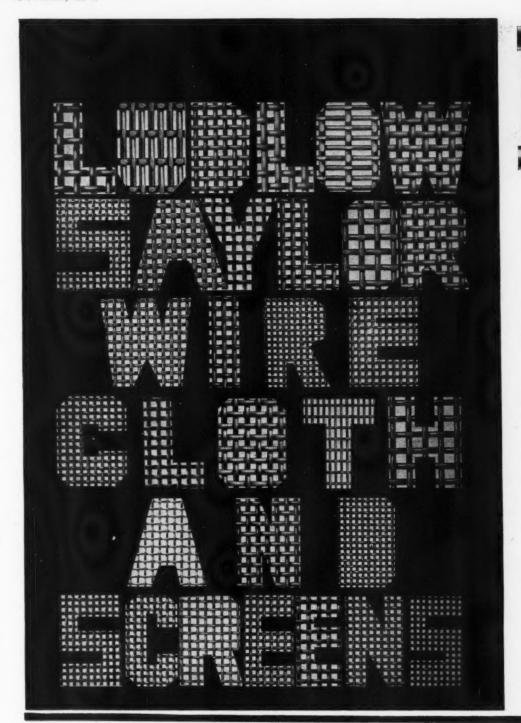
The initial order from the U. S. Post Office Department for the machines was recently placed with Commercial Controls Corp., Rochester 2, N. Y. Development and perfection of the machine, meeting the specifications set up by the Department and the exacting requirements of the U. S. Bureau of Standards, was accomplished by the company, long time manufacturers of mailroom machines and equipment used in business offices throughout the country.

The machines will be available commercially, and it is expected that soon they will be used wherever stamps are commonly sold as a service to patrons and employees.

#### WAR SURPLUS DISPOSAL

Reporting on war surplus disposal, Administrator Robert M. Littlejohn stated that the disposal program had entered the pre-liquidation phase, and that the future disposal task may amount to as much as \$15,000,000,000 of surplus property. This, he said, includes large acquisitions expected to come from the owning agencies over the next few months, expressing the hope that the final phase of liquidation can begin early in 1948. The report said that the contraction of the market for surplus, noticeable during late 1946, continued. "As the surplus disposal program approaches the final liquidation phase, still lower rates or recovery may be expected", W.A.A. said, predicting that declaration of surplus by the Army and Navy will continue in volume until Congress determines the size of the armed forces, adding that within three months after legislative action, the War and Navy Departments are "to declare surplus all property then deter-mined excess to their needs."

(Please turn to page 260)





Double-Crimp



Arch-Crimp



Flat-Top

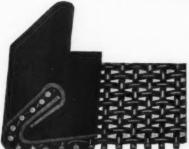


Intermediate-Crimp

#### The LUDLOW-SAYLOR WIRE COMPAN NEWSTEAD AVENUE & WABASH RAILROAD ST. LOUIS 10, MO.

UPER-L LIVE-WIRE 0 Y SCREEN DECKS and JACKETS

Engineered to your exact requirements.



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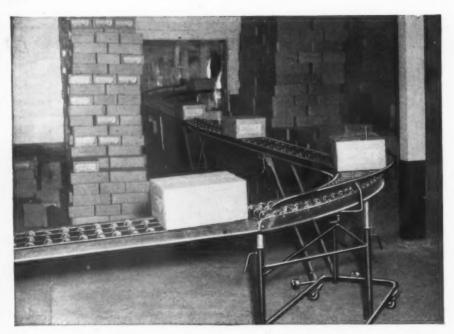
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Order Ludlow-Saylor Engineered Hook-Strips for tensioning vibrator-screen decks. They transmit to every tensioned wire an equal share of uniform vibration, evenly distributed throughout the entire screen area. They make screen decks last longer -step-up screen capacities-are easier to handle-quicker to install-need fewer adjustments and renewals.





# Cut Labor Costs

## RAPIDS-STANDARD CONVEYORS

Fast, efficient handling of the cases and empty jars from the time they enter the plant, throughout filling, storage and loading is accomplished at Cinderella Foods, Inc., Dawson, Ga., through the use of a Rapids-Standard Conveyor System.

In the words of Mr. C. M. Cruikshank, Executive Vice-President: "The savings in labor for us is tremendous. I estimate that your gravity track and boosters are saving us from \$200 to \$250 each week. We just couldn't do without them and if no more were available, we wouldn't sell them for five times what they cost."

The Rapid - Wheel Gravity Conveyor and

The Stevedore, Jr. (Power Belt) Booster make a handling team in this plant that eliminates all strenuous lifting and hand moving. Cartons placed on the conveyor at the loading dock move on to their destination without rehandling. Stevedore, Jr. does the heavy lifting work and Rapid-Wheel Conveyor carries the cases through the plant by cost-free gravity. Cases move in a minimum of space all the way and traffic problems are non-existent. Both Stevedore, Jr. and Rapid-Wheel Conveyors are easily portable and can be quickly set up in any part of the plant or warehouse.

Check into the advantages of this cost reducing equipment today. What it has done for hundreds of others it can also do for you. It COSTS NOTHING TO GET FULL PARTICULARS. WRITE TODAY FOR FREE LITERATURE.



Sales Division—379 Peoples National Bank Bldg., Grand Rapids 2, Mich.

#### FREE BOOK ON **EXTRUDED PLASTICS**

"Extruded Plastics," a book published recently by Detroit Macoid Corporation, contains valuable facts for persons who specify or design plastics parts or prod-

Its contents include factors in the selection of material, tool making, the how and why of extrusion, uses for extruded plastics, the how and why of injection molding, and characteristics of plastics. Also included are a brief history of plastics and a library of more than 270 stock extrusions.



Among the materials described are the following: cellulose acetate, cellulose acetate butyrate, ethyl cellulose, methyl methacrylate, nylon, polyethylene, polystyrene, polyvinyl chloride, and vinyl-chloride-acetate.

Extruded Plastics is available without charge to persons who write on their business letterhead to Detroit Macoid Corporation, 12340 Cloverdale, Detroit 4, Michigan.

#### 1 1 1 TO RECONSIDER REUSE OF SINGLE TRIP CONTAINERS

Various "emergency" providing for reuse of ICC Specification 17-E steel drums for the duration, are deemed to have served the purpose for which they were designed, and are to be scrutinized in the light of current conditions, i.e., suitability and need for repetitive use, market conditions of supply and cost, experience as to efficiency etc. having in view the effects upon all concerned of a program of canceling out December

There may be justification for continuing some provisions beyond that date, and the need or desirability should be explored and your requirements made known as promptly as possible. The foregoing refers to ICC Spec. 17-E, 18 gauge (55 gal. cap.) steel drums employed in the distribution of flammable liquids, flash-point below 80 deg. F., exclusively, Camptell's Freight Tariff No. 4, Section 28 (h), July 10, 1943.

-Natl. Paint, Varnish & Lacquer Assn. (Please turn to page 262)

FORMULA FOR LONGER BEARING LIFE:

N · B · M DIESEL ENGINE BABBITT



Virgin-alloyed under scientific controls to protect bearings from extreme stress.

Another triumph of Brake Shoe Research!

**Brake Shoe** 

NATIONAL BEARING DIVISION

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PLANTS IN: ST. LOUIS, MO. . PITTSBURGH, PA. . MEADVILLE, PA. . JERSEY CITY, N. J. . MILES, OHIO . PORTSMOUTH, VA. . ST. PAUL, MINN. . CHICAGO, ILL.



Clipper Masonry Saws

Your Special Size and Shape Brick or Concrete Block can now be "Tailor-Made" at a moment's notice!



The new Clipper Multiple Cutting Principle makes possible faster cutting of every masonry material regardless of hardness.

Here are a few typical examples of the speed and accuracy with which concrete products and fire brick can be cut.



This concrete block, converted into a special size, was cut completely in two in 19 seconds.

One of the many intricate cuts performed on first quality clay brick for heat treating furnaces.—made in 8 sec.





Rotary Kiln Blocks, cut to size for "key" bricks in rotary kilns, require only 10 sec. for completion of cut.

Basic refractories for steel furnaces or cement kilns must be accurately installed. This magnesite brick was cut in 12 seconds!





CLIPPER MFG. COMPANY 2804 Warwick, Kansas City 8, Mo.

#### ADVERTISING CAMPAIGN AIMED AT LOWERING FASTENING COSTS

In line with the industry-wide effort to produce at lowest possible cost, Russell, Burdsall & Ward Bolt & Nut Co. has instituted in PURCHASING and other business magazines, a program of advertising dedicated to guiding manufacturers in the selection of fasteners which will contribute to the lowest total cost of assembly.

The campaign is devoted to the subject of "True Fastener Economy", which is symbolized by the abbreviation "T.F.E." Harry O. McCully, vice president and general sales manager, states that "It is the cost of using a fastener that counts, and the use of a fastener involves expenses all the way from engineering specifications to the handling of returned goods.

"We are investing huge sums of money in machinery and equipment to permit us to manufacture bolts, nuts, screws and rivets which will help to lower the cost of using such fasteners, and, the savings which our customers can obtain in this way are certainly greater than could be obtained in many other ways."

It is pointed out that any savings in purchase price may be infinitesimal when compared with the economies that can be made by the properly specified fastener for specific uses.

The campaign lists the following eight requisites for True Fastener Economy:

 Reduce assembly time to a minimum by saving through use of accurate and uniform fasteners.

2. Make your men happier by giving them fasteners that make their work

 Reduce the need for thorough plant inspection due to confidence in supplier's quality control.

Reduce the number and size of fasteners by proper design.

 Purchase maximum holding power per dollar of initial cost by specifying correct type and size of fasteners.

 Simplify inventories by standardizing on fewer types and sizes of fasteners.

 Save purchasing time by buying larger quantities from one supplier's complete line.

 Contribute to sales value of final product by using fasteners with a reputation for dependability and finish.

It is pointed out that some of the "T.F.E." points are based upon a customer availing himself of the fastener manufacturer's engineering staff for advice on selection of fasteners. In some cases many thousands of dollars have been saved by reducing the total investment in fasteners without sacrificing, and often increasing, the strength of an assembly. Further savings may be developed by a fastener standardization program.

Furthermore, study by a qualified engineer often makes it possible to coordinate the specifications of various departments. In this way the number and frequency of

(Please turn to page 264)



## Handiest

#### where bard-to-bold

The small-size screws you so largely use can be held on the end of an Allen driver and started in the tapped hole instanter! Or they may be held on an Allen Hex Key and turned in places where thumband-finger work awkwardly if at all. Fast in assembling!

And for set-ups hard to hold under vibration, "Allens" have (1) STRENGTH for tight wrenching; (2) Accurate threading to a high Class 3 fit, for a high degree of frictional holding-power.

Your local Industrial Distributor supplies also Allen Socket Head Cap Screws, Flat Head Cap Screws, "Tru-Ground" Shoulder Screws and "Tru-Ground" Dowel Pins. Ask bim for samples or demonstration.



THE ALLEN MFG. COMPANY



FOOD-HANDLING and serving places all beauty of Allegheny Metal, America's pioneer stainless steel. In hotel and hospital kitchens, restaurants and lunch rooms, food plants and dairies, it's the management's greatest ally in assuring sanitary conditions, appetizing flavor and unspoiled purity.

and unspoiled purity.

Easy to clean and keep clean, good for a lifetime in service, Allegheny Metal equipment cuts maintenance and depreciation costs to the bone. Investigate the highly-developed properties of strength and resistance to corrosion, wear and oxidation inherent in this time-tested stainless steel—they can help you. Allegheny Metal is highly uniform—it's easy and inex-

pensive to fabricate—and it's available now, ready for your order in any form or shape required.

• Call for an Allegheny Ludlum engineer.





STEEL CORPORATION Pittsburgh, Pa.

PIONEER IN SPECIALLOY STEELS

W&D 959C . ALLEGHENY METAL is stocked by all JOS. T. RYERSON & SON, Inc., Warehouses



When you place an order for small Stampings, you are entitled to close inspection — reasonable delivery — and in general, handling of the job to your satisfaction.

PRODUCT"

All this you get when you order master product Small Stampings and Special Washers. A long list of satisfied customers is evidence of our ability to turn out the kind of work you demand, backed by more than a quarter-century of experience.

Send us your blue-prints. Or, we will help you design the Washers and Stampings, you need. Any metal — any quantity.

MASTER PRODUCTS

6400 PARK AVE. - CLEVELAND 5, OHIO

(Continued from page 262)

stock requisitions are reduced, it is easier to maintain adequate inventories, paper work attendant to purchasing is eliminated, and the receiving and stores departments also benefit.

#### BROCHURE ON METALS FOR DIE CASTINGS

An unusually thorough and authoritative presentation on problems in die casting, and on the characteristics and applications of the various die casting alloys, has been issued by Federated Metals Division of the American Smelting and Refining Company. Titled "Di-Metal for Better Die Castings," the brochure is not simply a listing of specifications of Fed-



erated's own products, but a highly informative exposition on the nature of die casting, die casting processes, the selection of alloys, general metallurgy of the alloys, effects of impurities, the melting of the metals, and many other essential brackets of information.

The book also contains tables of SAE, Army, Navy, and Aeronautical specifications; a chart on composition of steels for dies, and a table of dimensional and weight limits for die castings of various alloys. This useful literature available by writing Federated Metals Division, 120 Broadway, New York 5, N. Y., Dept. SJ.

### FREE SERIES OF BOOKLETS ON GRINDING WHEELS

The Grinding Wheel Manufacturers Association, Harry B. Lindsay, secretary, 27 Elm St., Worcester, Mass., announces the publication of a series of booklets on the operation of grinding wheels and grinding machines, the first of which entitled "Portable Grinding Machines, Safe and Efficient Operation", is now available on request. The booklet describes and illustrates proper methods of mounting wheels on portable machines and gives tips and suggestions for safe and efficient operation of this type of machine.

Copies of the entire series will be sent to Purchasing Agents and others interested, who send their name, business connection and address to the association.

(Please turn to page 268)

## DARNELL CASTERS





Handling

Materials

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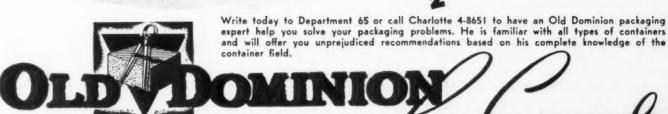
Superior

Stainless strip

# PLANT PURCHASING DIRECTORY

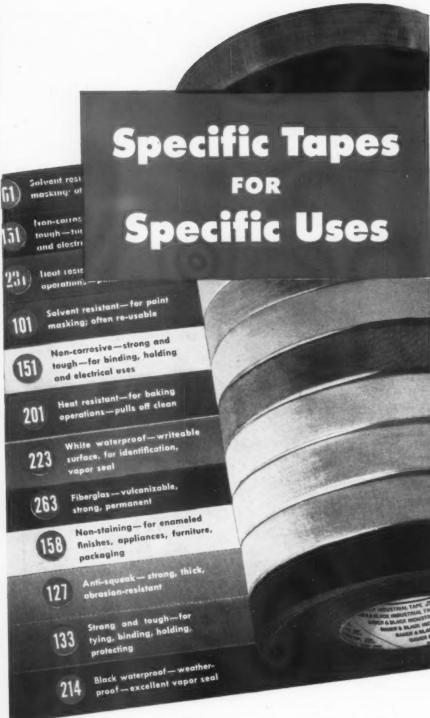






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# Industrial Adhesive Tape

Production Short Cuts to Reduce Costs • Research to Speed and Improve Methods

#### O.T.S. ANNOUNCES INDEX TO WARTIME TECHNOLOGICAL DEVELOPMENTS

The third volume of a comprehensive Index to the tens of thousands of reports on wartime technological developments in the United States, and in Germany and other foreign countries was recently released for sale by the Office of Technical Services, Department of Commerce.

The Index is intended for use with OTS' Bibliography of Scientific and Industrial Reports. Published weekly since January 1946, the Bibliography lists all reports acquired by OTS and contains a brief abstract of each. The Bibliography is on file at most large public libraries and is also available from the Superintendent of Documents, Government Printing Office, for \$10 a year.

The third volume of the *Index* provides a ready reference to 13 issues of the *Bibliography* from October 4 to December 27, 1946 inclusive. It also includes reference to the German patents in chemistry, electronics, scientific instruments, photographic equipment and processes, and transportation equipment which were listed in the *Bibliography* during this period.

Researchers will find the *Index* a convenient guide to specific subject fields since it is elaborately cross referenced. Each entry in the *Index* lists the file number of the report and refers to the page number of the *Bibliography* where an abstract of the report may be found. Thus, with the *Index* and *Bibliography* at hand a researcher can readily determine how many reports OTS has available in a given subject field and examine an abstract of each.

The three volumes of the *Index* are available from the Superintendent of Documents, U. S. Government Printing Office. Washington 25, D. C. Volume 3 costs 35 cents a copy. Volume 2, covering issues of the *Bibliography* from July 5 through Sept. 7, 1946, is also 35 cents. Volume 1, covering issues of the *Bibliography* from Jan. 11 through June 28, 1946, is 50 cents.

Orders for the *Index* or *Bibliography* should be accompanied by check or money order payable to the Treasurer of the United States.

#### 1 1 1 1947 EDITION OF PRODUCTS OF EATON

Announcement is made by the Eaton Manufacturing Co., 739 East 40th St., Cleveland, Ohio, of the release of the 1947 edition of "Products of Eaton, manufacturers of axles, engine valves, rotor pumps, permanent mold gray iron castings, spring lock washers, snap rings, soil springs, leaf springs and numerous other products." The new edition illustrates a number of new developments not included in the 1946 booklet, notably dynamatic devices, oil well draw works brakes, and vehicle fan drives. The book is a complete presentation of all Eaton products and divisions.

(Please turn to page 270)



## and pulling for you! Latest-type new Road Diesels

Here's the power Katy promised you-New three-unit, 4500 h. p. diesel giants to speed your merchandise to destination many precious hours ahead of schedule.

Fast, dependable, on-time service between St. Louis, Kansas City and important points in Missouri,

Kansas, Oklahoma and Texas-on the

stepped-up schedules of the Southwest's

Main Supply Line. O. K. KATY!

Here's POWER! 2 cab sections and one booster section power each big diesel locomotive HOLDS 3600 gallons of

Geared for MAXIMUM Over-all LENGTH, over SPEED of 65 M.P.H. couplers, 151 ft. 4 in.

4500 Horse Power-PULLING FOR YOU! TOTAL WEIGHT, fully loaded, 690,000 pounds

MISSOURI - KANSAS - TEXAS LINES

Serving the Southwest





Pat'd and Pats. Pend. CAN BE USED

### **OVER and OVER AGAIN**

The "Unbrako" Socket Set Screw with the Knurled Cup Point is a SELF-LOCKER,—its knurled point digs-in and holds tight—regardless of the most chattering vibration. Yet, it can be backed-out with a wrench and used OVER and OVER AGAIN. Many, many millions in use—and no wonder! Available in sizes from #4 to 1-½" in diameter; full range of lengths. Write for "Unbrako" Catalog, today.

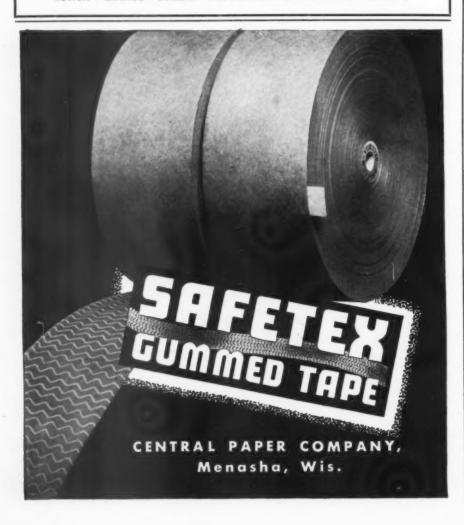
"Unbrako" and "Hallowell" Products are sold entirely through Industrial Distributors.

Knurling of Socket Screws originated with "Unbrako" in 1934.

OVER 44 YEARS IN BUSINESS

#### STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA. • BOX 590
BOSTON • CHICAGO • DETROIT • INDIANAPOLIS • SAN FRANCISCO • ST. LOUIS



## BRITISH MALAYA RUBBER PRODUCTION ESTABLISHES NEW RECORDS

Rubber production in British Malaya has recovered more rapidly since the end of the war than was generally expected, the Department of Commerce announced recently. Production of natural rubber during the first six months of this year totaled 310,859 long tons, the second best six-month output on record. British Malaya accounted for over 50 percent of world production of rubber in the six months.

Production throughout the elapsed period of this year has been augmented by flush yields from trees rested during the period of Japanese occupation, ac-

cording to the article.

The task of rehabilitating the rubber industry of British Malaya after the Japanese were driven out was great and quick recovery seemed unlikely. Plantations were overgrown with weeds, many trees were destroyed by the Japanese and others were in poor condition after almost four years of neglect. Buildings were destroyed, installations were wrecked or vital parts stolen and labor was dispersed.

Owners of small plantations which provide their own labor and required only a minimum of equipment managed to improvise needed coagulants or purchase them in the black market. Production was thus started quickly and the rate of output accelerated throughout 1946.

William N. Small, Rubber Section, Office of International Trade, states that in the absence of any retarding factors, Malayan production, imports and exports of natural rubber will establish all-time new annual records in 1947.

# # # # # RECORD-BREAKING RUBBER PRODUCTION

A measure of the record-breaking production achieved by the American rubber manufacturing industry during the first half of 1947 was shown today in a report on rubber consumption for that period.

In its monthly report on the use of all types of crude rubber, The Rubber Manufacturers Association noted a 15.74 percent increase in consumption over the first half of 1946, a year in which the industry consumed 1,039,000 long tons of natural and synthetic rubber. That was an all-time high, and compared with an average annual consumption of less than 500,000 tons in the ten years prior to the war.

Consumption in the first six months of 1947 totalled 571,774 long tons of all types of crude rubber. This compared with 494,018 long tons in the first six months last year. In addition to crude, the industry used 147,593 long tons of reclaimed rubber, as against 131,091 long tons in the first half of 1946.

June consumption was actually down from the preceding month, with figures beginning to reflect the normal seasonal decline in manufacturing activity during the summer months are marked by inven-

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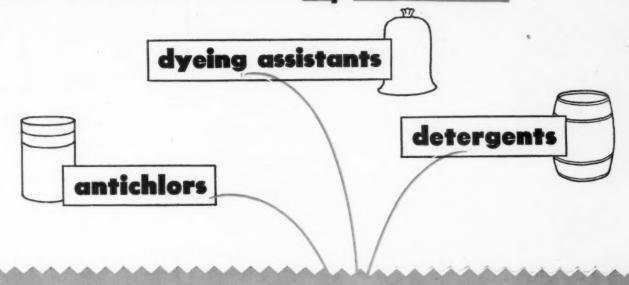
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# SPECIFY "GENERAL"

Color—finish—production efficiency—these are largely dependent upon the quality, purity and uniformity of the textile chemicals you use. For certainty in your selection of basic chemicals . . . specify "General Chemical."

General Chemical's "know-how" as a producer of industrial chemicals, plus its long experience in serving the textile field, assures detergents, acids, antichlors, peroxide-stabilizing agents and dyeing assistants of the utmost dependability.

#### GENERAL CHEMICAL COMPANY

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In Wisconsin: General Chemical Wisconsin Corp., Milwaukee, Wis.

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#### Select Your Basic Textile Chemicals From These General Chemical Products

Aqua Ammonia

Acetic Acid

Hydrofluoric Acid

Muriatic Acid

Sulfuric Acid

Epsom Salt

Glauber's Salt

Sodium Bifluoride

Sodium Bisulfite, Anhydrous

Sodium Hyposulfite

Chemical Products

Sodium Metasilicate
Sodium Silicate

Disodium Phosphate, Anhydrous

**Tetrasodium Pyrophosphate** 

Trisodium Phosphate

Sodium Sulfide

Oxalic Acid

Chrome Alum Ferric Sulfate

(Iron Copperas Nitrate)

Sodium Sulfite, Anhydrous

Nitre Cake

(Sodium Bisulfate)

Nitric Acid

Mixed Acid

**Aluminum Sulfate** 

Lead Acetate

Aluminum Chloride Solution







ings are hardened throughout-lapped and polished to mirror finish—accurate in sphericity to .000025". Each bearing contains a matched set of balls identical in size to .000025".

Whether the bearing is of deep groove construction for thrust capacity or the maximum ball type for extra radial capacity the balls are accurate to the "Nth" degree for smooth, quiet performance and long life.

Without this extreme accuracy a bearing cannot be top quality.

Ahlberg Bearing Company, 3039 West 47th Street, Chicago 32, Illinois.



BALL BEARINGS · ROLLER BEARINGS · PILLOW BLOCK

(Continued from page 270)

tory taking and plant vacations. In June manufacturers used 84,899 long tons of crude rubber, a decline of 7.43 percent from May.

Estimated rubber consumption by domestic manufacturers for the six months ended June 1947, in long tons, was as follows: Natural rubber 258,792; manufactured rubber 312,982, as follows—GRS 251,143, neoprene 21,031, butyl 38,464, and GRS-N 2,344.

#### SURPLUS RECOVERY RATE PUT AT 34.3 PERCENT

Since 1944, approximately \$18,000,000.-000 (original cost) in surplus war property has been disposed of, War Assets Administration disclosed in reporting May preliminary disposal figures.

The May disposal figure of \$783,831,-000, representing the original cost of surplus disposed of by all domestic disposal agencies during the month, swelled the cumulative total to \$17,867,165,000.

The latter figure includes \$10,301,269.-000 in sales, \$6,257,274,000 in miscellaneous disposals such as scrapping, donations and transfers to Federal agencies; and \$1,308,622,000 in leases.

The return to the government on sales thus far has been \$3,534,833,000, or a recovery rate of 34.3 percent.

Acquisitions of surplus to date have totaled \$26,577,500,000. Inventory available for disposal at the end of May was \$8,710,335,000.

#### 1 1 1 SAFETY INSTITUTE ISSUES VENTILATING EQUIPMENT RULES

Ventilating equipment provides basic protection from health and fire hazards in the solvent department, and should be inspected regularly. Even well-designed ventilation systems will become inefficient unless properly maintained. To eliminate the five most common causes of failure of ventilating equipment, the following points should be checked:

IS THE FAN BELT RUNNING BACKWARDS? Strangely enough, this is the most frequent reason for failure of correctly designed equipment. Sometimes a fan requires repairs, and then is reversed when it is started up again. regular check on the direction of fan motion is important.

IS THE FAN BELT LOOSE? Loose belts cause the fan to run too slowly. Since new belts, generally loosen up somewhat after use, they should be ad-

justed after installation.

IS THE SYSTEM OVERLOADED? While a system may be correctly designed for the initial load, it often happens that additional outlets are later added, reducing the overall efficiency of the equipment. The velocity of the air stream should be measured regularly, and whenever additional ducts are added. ARE THE DUCTS AND BLADES DIRTY? Dirt in a ventilating system is a frequent cause of breakdown and in-

(Please turn to page 274)



Here is an extra sturdy shut-off valve that will give you better performance on your products and in your plant. Provides real protection against leakage. Assures positive shut-off.

Has plug, made of special nickel silver alloy, which is double ground to prevent leakage or seizure after valve has been in use for some time. Other working parts are brass or bronze.

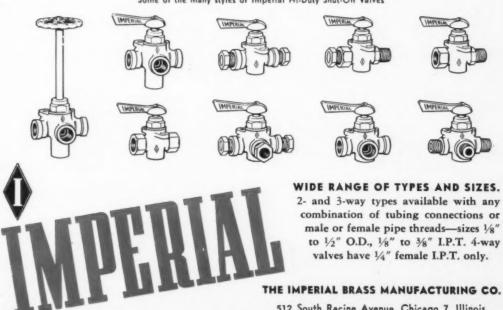
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Imperial Hi-Duty Shut-Off Valves are used for liquids, gases, vacuumlow and medium pressure applications. Extensively used as original equipment on trucks, tractors, buses, power units on fuel and oil lines; also as shut-off or distributing valves in processing plants. These valves have an outstanding record of service in the field. Write for Catalog No. 122-A.

Some of the many styles of Imperial Hi-Duty Shut-Off Valves



512 South Racine Avenue, Chicago 7, Illinois

Compression, Flared, Inverted Flared, Hi-Duty, and Flex Tube Fittings . Shut-off Valves . Needle Valves to Fuel Str



"Everybody wants to get into the act since we got the General Electric Water Cooler."

Office workers, too, get a lift from General Electric Water Coolers. So refreshing...so dependably cooling. And they're economical to operate. Ask your General Electric Dealer for full information. General Electric Company, Air Conditioning Department, Section 72910, Bloomfield, N. J.

GENERAL ELECTRIC

Water Coolers .



(Continued from page 272)

efficient operation. Systems should be cleaned regularly. Fans should be run for a few minutes after operations are finished, to allow for complete emptying of the ducts.

IS THERE INSUFFICIENT MAKE-UP AIR? Since ventilating equipment exhausts air, it cannot run efficiently unless there is provision made for enough make-up air to enter the room.—Safety Research Institute.

# COURSE IN INDUSTRIAL PURCHASING POLICIES SPONSORED BY FORD COMPANY AND WAYNE UNIVERSITY

1 1 1

Ford Motor Company purchasing division officials, Dearborn, Mich., have joined forces with Wayne University, Detroit, Mich., in offering a unique course in "Industrial Purchasing Policies" to evening students during the coming semester in the University's School of Business Administration.

The 16-week course offers a cross section study of the industrial buying field conducted by the executives in charge of buying and purchasing staff functions at

Ford.

The Purchasing division of Ford, probably the largest of its kind in the world, has made available 15 instructors for the evening class series. These men are department heads and specialists in their respective fields. The program is under the direction of Spencer A. Larsen, director of the department of general business at Wayne University.

Albert J. Browning, vice president and director of purchases of the Ford Motor Company, conducted the first meeting of the group and discussed the purpose and

scope of the course.

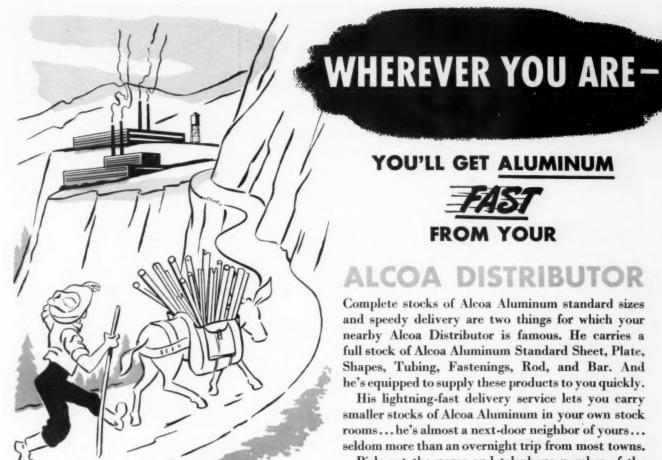
The course is especially designed for those professionally interested in the field of purchasing and will be thoroughly comprehensive being represented by such departments as the staff agencies which serve the buying departments such as analysis department and the commodity research department. The Lincoln-Mercury division purchasing department is also being represented.

The classes are held Tuesdays from 7 to 9 p.m.

# 1 1 1 SURVEY SHOWS INCREASE IN USE OF RADIANT HEATING

Upwards of 10,000 radiant heating installations are now in operation in this country, and nearly a thousand new ones are being made each month, according to the A. M. Byers Co., Pittsburgh, Pa. The company, which began promotion of radiant heating in 1937, when there were only four recorded installations in the country, has compiled technical information on individual installations since that time. The figures are based on a nation-wide survey made by Byers representatives among architects, pipe suppliers, heating contractors and engineers.

(Please turn to page 276)



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CHICAGO, ILLINOIS Steel Sales Corporation Phone: CRAwford 4400

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at 11aCINCINNATI, OHIO Williams & Company, Inc. Phone: CHerry 4700

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Complete stocks of Alcoa Aluminum standard sizes and speedy delivery are two things for which your nearby Alcoa Distributor is famous. He carries a full stock of Alcoa Aluminum Standard Sheet, Plate, Shapes, Tubing, Fastenings, Rod, and Bar. And he's equipped to supply these products to you quickly.

His lightning-fast delivery service lets you carry smaller stocks of Alcoa Aluminum in your own stock rooms...he's almost a next-door neighbor of yours... seldom more than an overnight trip from most towns.

Pick out the name and telephone number of the Alcoa distributor nearest you. And give him a call the next time you need aluminum in a hurry. ALUMINUM COMPANY OF AMERICA, 1931 Gulf Bldg., Pittsburgh 19, Pennsylvania.

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NEW YORK, NEW YORK Whitehead Metal Products Co., Inc. Phone: WAtkins 9-4900

PHILADELPHIA, PENNSYLVANIA **Edgcomb Steel Company** Phone: GArfield 3-6300

PHILADELPHIA, PENNSYLVANIA Whitehead Metal Products Co., Inc. Phone: BAldwin 9-2323

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PORTLAND, OREGON Pacific Metal Company Phone: BRoadway 0695

ST. LOUIS, MISSOURI **Metal Goods Corporation** Phone: GOodfellow 1234

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The Diversey Corporation
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(Continued from page 274)

According to the company, radiant heating has been used in virtually every type of structure, both private and government owned, in every part of the country. These include industrial, institutional and commercial buildings, and homes in all price ranges.

A cross-section survey of 1000 typical installations located in 45 states reveals that commercial installations (dairies, garages, showrooms, retail stores, banks, etc.) account for 28 per cent; industrial (manufacturing, warehousing and office structures) for 16 per cent; and institutional for 8 per cent. Residential installations account for 47 per cent, miscellaneous for one per cent. Seventy-three per cent of radiant heated buildings are one-floor-plants, 25 per cent are two-story structures, one-plus per cent three-story buildings, and less than one per cent for those above three stories.

## 1 1 1 STEEL CAPACITY DEEMED ADEQUATE

Present steel capacity would be adequate through 1975 to meet the peak annual rate of per capita demand witnessed during the 1920 to 1940 period, according to an analysis presented by Wilfred Sykes, president, Inland Steel Company, before the 55th General Meeting of the American Iron and Steel Institute.

Mr. Sykes pointed out that at the peak 1929 rate of 978 lbs. per capita, and allowing for a 10 per cent export demand, the expected 1975 population of 163,000,000 in the United States would need about 90,000,000 tons of steel. The present capacity of the industry is 91,241,230 net tons of ingots and steel for castings.

#### At 84 Per Cent in 1950

Using a similar per capita basis for requirements, he calculated that in 1950 the peak consumption rate would call for only 76,373,000 tons of steel and in 1955 it would be 78,464,000 tons, enough to support a steel operating rate of 84 per cent and 86 per cent of present capacity, respectively, for these two years.

Mr. Sykes stated that the present excessive demand for steel is "temporary," and that for normal peacetime purposes a peak domestic demand of about 1,000 lbs. per capita is likely.

He traced the rise and fall in average per capita steel demand from 1920 to 1940, with the low point being reached in 1932 at 236 lbs. But while 1929 witnessed the peak demand of 978 lbs. per capita, and only one other year did demand rise above 900 lbs. and that was in 1928 when demand hit 904 lbs. per capita. The weighted average demand from 1920-1940 came to 668 lbs. per capita.

#### Some Facilities Uneconomic

He said that present steel capacity was not "excessive," since it included certain uneconomic facilities which would probably have to be replaced over the near term. He estimated that practical economic capacity is around 80,000,000 tons.

(Please turn to page 278)

#### Present Day Practice in Belt Fastening

Every man who has anything to do with the purchase, application or maintenance of conveyor, transmission or V-belts will find the bulletins listed below of considerable value in connection with belt fastening work. A knowledge of present day practice in belt fastening helps reduce the loss in machine hours due to belt failures caused by the use of the wrong type of fastener or improper application. We shall be glad to send any or all of them to you or to any of the men in your organization.



FLEXCO HD Bolf Fosteners are used to make a "water-tight" butt joint in conveyor belts ranging from ½" to 1½" thick and of any width. The view on the right shows the various types of rips that can be repaired with these fasteners and Flexco HD Rip Plates.

Bulletin F-100 gives complete details on how to fasten and repair conveyor belts.



ALLIGATOR Y-Belt Fasteners are now being widely used to fasten B, C and D, openend V-belting of cross woven fabric core construction now being made by most belting manufacturers. The view at the left shows a typical application of these fasteners to a drive where endless V-belts would require dismantling the machinery to put the belts on the sheaves,

Bulletin Y-205 gives complete instructions on how to use V-belt fasteners.

FLEX V Fasteners for A and B belts are also available for lighter duty V-belt drives. Ask for Bulletin V-14.



ALLIGATOR Steel Belt Lacing is in worldwide use to make smooth, flexible joints in leather, rubber, balata, stitched canvas or solid woven belts up to 3/8" thick and as wide as they come.

Bulletin A-60 tells how to fasten and repair transmission belts.

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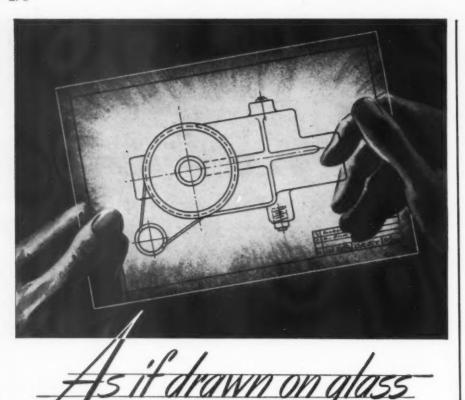


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AMERICA'S STANDARD FOR OVER 25 YEARS

#### NATIONWIDE AIR EXPRESS UP 26.5% FIRST HALF OF '47

The increased use of air express by American business and industry in its efforts to satisfy current consumer demand is graphically reflected in half-year figures recently released by the Air Express Division of Railway Express Agency. Traffic volume was the highest in the 20-year history of the service, the agency said.

Air express shipments handled in domestic airline service in the first six months of 1947 were up 26.5 per cent over the similar 1946 period, with a total of 1,747,293 shipments handled for 25 certificated airlines, compared with 1,381,088 shipments a year ago. This six-month total, it was pointed out, exceeded by more than 200,000 the number of shipments for the entire year 1943.

Gross revenue of this traffic increased 47.3 per cent over the similar 1946 first half, it was reported.

Shipments dispatched in June over the nationwide air express system of 70,000, route miles increased 25.5 per cent over June 1946. A total of 292,733 shipments were handled by the express agency compared with 233,188 shipments a year ago. Gross revenue for the month was up 38.6 per cent, the agency said.

# AMERICAN AERONAUTICAL INDUSTRY USING DECIMAL DIMENSIONING

1 1 1

Decimal dimensioning, affording major benefits of the metric system without simultaneously creating wholesale disruptive conversion headaches, increasingly is being used by the American aeronautical industry.

Survey by the Aeronautical Drafting Committee of the Society of Automotive Engineers, made among airlines operators and manufacturers of planes, powerplants, propellers, and accessories, discloses that 80 per cent now employs decimal dimensioning or contemplates its early adoption. Users explain that the practice of expressing limited measurements in decimals rather than fractions of inches contributes to speed and to accuracy both in design and in manufacture. Decimals are carried to two, three, or more places to satisfy varying tolerance requirements.

The survey reveals that 76 per cent of the aeronautical industry has considered the use of decimal dimensioning, that 63 per cent uses it already, and that 37 per cent is using it for some purposes. In the propeller branch of the industry, 80 per cent of manufacturers uses the decimal dimensioning system exclusively.

The practice is characterized as making the dimensioning of drawings much easier and more rapid and as being especially helpful in eliminating the time-consuming, error-producing operations of converting decimals to fractions and back to fractions again. Furthermore, tolerances may be indicated merely by extending digits after the decimal point.

(Please turn to page 280)



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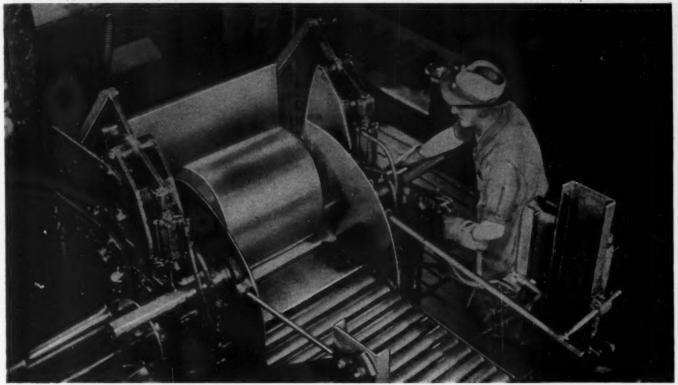
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Quality brass strip is produced on the most modern, rolling mills, typical of the up-to-date facilities at Bridgeport's mill in Indianapolis, Ind.



## SOLVING YOUR PROBLEM OF SUPPLY— **BRIDGEPORT'S INDIANAPOLIS MILL**

The location of this new mill in the heart of the great industrial midwest is an added convenience to users of brass mill products. It enables speedy overnight delivery service to Chicago, Cleveland, Detroit, St. Louis, Minneapolis and other cities in the area.

Here, the most modern facilities are used for the accurate, straight-line production of quality brass, bronze, copper sheet, rod, wire and tubing. This equipment implements the skill and production experience acquired through our intensive research and our 80 years of developing and processing superior brass products.

Through closer contact, we are able to render better

and more specialized technical service in the selection and application of standard and special engineering alloys made to order for your particular needs. Bring your most exacting demands to our mills or conveniently located warehouses.



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Mills at Bridgeport, Connecticut, and Indianapolis, Indiana. In Canada—Noranda Copper and Brass Limited, Montreal

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RIDGEPORT

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DEVELOPED IN DOLGE LABORATORIES

- KADOL is today's method of 
   cleaning various types of floor-
- ing because its concentrated,
   brilliant liquid form permits
- pouring to make an economical
- dilution of only two ounces to the gallon of water. Easy to
- handle and it goes a long,
   clean way in keeping your
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KADOL is neutral - can be

- used safely on linoleum, cork
- also wood mastic, tile and many other surfaces, and is
- recommended as a general
   cleaner. No rinsing is ordinar-
- ily required; when a KADOL cleaned surface is dry-mopped,
- an attractive polish results.
- KADOL has no druggy, clinging odor associated with
- usual cleaning compounds. Its
   fragrance is pleasant and un-
- obtrusive.
- Write for the new KADOL
   booklet which explains its
- many advantages, and see
   your DOLGE Service Man.

## KADOL

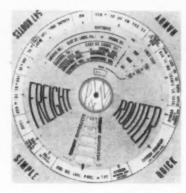
The C. B. DOLGE CO.

WESTPORT, CONNECTICUT

#### FREIGHT ROUTING DIAL ISSUED BY P. & W. V. RY.

With a push of their thumb against the dial of the Freight Router, traffic men now can determine at a glance just how their freight shipments should be routed on railroads between the east and the west.

Designed by Edward E. Hopper, assisttant to President Chas. J. Graham, of The Pittsburgh & West Virginia Railway Company, the Freight Router, which has been copyrighted, contains 547 routes over Eastern railroads in connection with the P. & W. V.



With one setting of the dial, these routes are determined by reading at the top to obtain gateways with Western railroads, and by reading at the bottom to obtain one of 37 lines east of the P. & W. V. The routes between gateways and lines east are applicable to inter-territorial traffic, reading downward for eastbound traffic, and upward for traffic westbound.

Distribution of the Freight Router is being made by general agents of the P. & W. V., or traffic men may secure copies upon request directly to The Pittsburgh & West Virginia Railway Company, Room 411, Wabash Building, Pittsburgh 22, Pa.

#### REVISED EDITION OF S.P.I. DIRECTORY AVAILABLE

1 1 1

The 1947 revised edition of the Directory of the Society of the Plastics Industry, Inc., has been mailed to members and will shortly be available for more general distribution.

This fourth edition of the directory lists the entire S.P.I. company and individual membership, which has risen 25 per cent in the past year. Names and addresses of persons prominent in the industry are listed in a "Who's Who" section. The listing covers membership in this country, Canada, and 10 foreign companies.

It cites typical products of members who are molders, extruders, fabricators, laminators, etc. and carries separate listings for materials manufacturers, Plastic machinery makers, professional and publisher members and those engaged in educational and research work. Price of the directory to members is \$3.50; to non-members, \$4.50.

(Please turn to page 282)

### DO YOU USE WIRE CLOTH?



#### MICHIGAN

- Draws the Wire
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in one continuous line

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LOW OVERHEAD
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Iowa Manufacturer of electric generators and farm equipment desires continuous contract production of individual pieces, assemblies or entire product. Complete machine, structural, welding, assembly and foundry facilities available. Established 23 years. Non-union, low overheads, favorable low cost conditions. B1 Dun rating.

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Pick it up! Grip it! Heft it! There's something really different about this new RATCHET! Lightweight, bulkfree, super-strong-it's another member of this famous Line, now completely redesigned.

Note that slim OVAL handle and reduced head size . . . every bit as compact as it looks. But, don't let that graceful slimness fool you . . . this Tool is stronger than ever! LESS material, scientifically reshaped, gives MORE strength. And, it will go places no other ratchet ever fit before. The new oval grip, too, fits the hand naturally more securely, less tiring.

Strengthened, lightened, streamlined for action - the entire New Britain Line has been re-engineered for unrivalled utility! Where the going is tough in the tightest spots, you can count on this Greater Strength - Better Fit. Ask your Mill Supply Jobber to show you this redesigned Line. The New Britain Machine Co., New Britain, Conn.

The complete New Britain Line for Au-Aircraft, General Maintenance tomotive, & Production Needs is sold by leading Jobbers.



Excess material, top and bottom in old round shape, did little or no work. Removing this surplus greatly reduces weight and bulk. Very slight reinforcement added to each side of new oval shape - in direction of push and pull - develops amazing new strength at less weight.

GREATER STRENGTH . BETTER FIT

# \*Order by Quality



To get the number of fastenings you need . . . order by quantity. But more important, to get the accuracy and holding power you need . . . order by quality.

All Chicago Screw fastenings are of the highest quality, manufactured from the finest materials and unsurpassed for strength, accuracy and clean, true threads.

The knowledge, facilities and experience acquired during 75 years of manufacturing fine threaded products has resulted in a line of fastenings ideally suited to all modern production methods.

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1947

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Socket Head Cap Screws
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Complete line includes:

Hexagon Head Cap Screws
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Taper Pins
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Nuts
Semi-Finished Hexagon
Castellated Nuts

# THE CHICAGO SCREW CO.

ESTABLISHED 187

1026 SO. HOMAN AVENUE CHICAGO 24, ILL.

#### REPORT ON NATIONAL PETROLEUM SITUATION

Although there has been a gradual increase in imports of petroleum, it is not likely that the United States will ever have to import a major share of its needs, the Department of Commerce reports.

If domestic petroleum production were to become inadequate, the United States would be able to meet the deficit by manufacturing a sufficient volume of liquid fuels from non-petroleum sources.

These conclusions are contained in a report entitled "United States Petroleum Import Prospects," published by the Department of Commerce and prepared by R. L. Trisko of the Fuels and Lubricants Section, Office of International Trade.

It may be temporarily necessary to resort to larger imports to fill deficits until the future of the domestic crude oil industry becomes clearer than it is now and until manufacture of synthetic fuels can be accomplished, according to the report.

The oil industry is putting an unprecedented volume of capital and energy into finding new oil and is preparing the groundwork for development of alternative domestic sources of liquid fuels as a hedge against not finding new oil.

The author regards as unrealistic the predictions that the United States will be importing half of its petroleum needs within 20 years, but he examines the implications if such a development were to come about.

In discussing the principle alternative sources of liquid fuels, namely natural gas, shale oil and coal, the report says it would be a mistake to conclude that any one or a combination of these would ever displace crude petroleum. However, they are likely to become increasingly important as a supplement to our liquid fuels supply if the domestic crude industry enters a period of permanent stabilization or decline.

There are limitations to the supply of natural gas for conversion to liquid fuels but similar limitations do not apply to the sources of shale oil and coal, according to the report.

The coal industry has the ability to produce coal for synthesis in addition to that produced for present uses. Excess capacity is one of the traditional economic problems of the coal industry. If a further increase in capacity was desirable, it could be obtained by opening new mines and by increasing productivity in the mines now operating.

Reserves of shale are about five times as large as proved crude oil reserves. They offer the disadvantage of being in the Rocky Mountain region away from the large consuming areas.

Examining the cost of producing liquid fuel from gas, coal and shale, the author says estimates indicate that gasoline from coal could be made and sold at the plant at from \$3.78 to \$4.62 a barrel and from natural gas at from \$2.94 to \$3.57, including an allowance of 63 cents profit per barrel. This compares with March

(Please turn to page 284)



The SUPERSTRONG box or crate you buy today represents the experience and expert craftsmanship gained in nearly a century of better box making.



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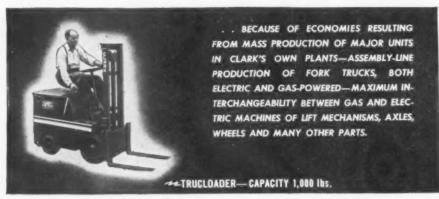
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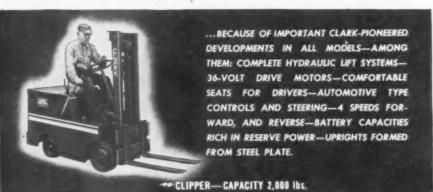
Many large users of shipping containers are planning with us for their long range requirements. Our engineering department will be glad to tell you how SUPERSTRONGS—"Bound with Steel"—can solve the shipping problems of your future postwar products.

RATHBORNE, HAIR AND RIDGWAY COMPANY

## CLARK Electric Fork Trucks cost less!



## CLARK Electric Fork Trucks are unexcelled!



# Users prefer CLARK Electric Fork Trucks!



(Continued from page 282)

refinery gasoline prices of from \$3.05 to \$3.57 a barrel. It is estimated that gasoline can now be produced from natural gas at a cost competitive with that made from petroleum.

Commercial development of liquid fuel from coal and shale depends on the solution of numerous technological and commercial problems, including the marketing of products and by-products not obtained through the refining of crude petroleum.

The cost of oil imported into the United States 'varies according to the country in which the oil is produced, the circumstances of the importing company—whether a parent company or non-affiliated firm, the transportation facilities that are used, and the current tariff policy of the United States. Tanker rates are abnormally high at present.

The report finds that when an importer is a parent company which directly or indirectly receives the benefits of low cost foreign production, and when the most economical transportation methods are used, foreign oil can be brought into the country at an appreciable saving over the cost of similar quality oils produced domestically. However, the quantity of oil available abroad is and will be limited.

In addition the author says that future costs and other conditions of ownership and production abroad are surrounded with uncertainties which, from a purely tusiness point of view, are discouraging to excessive imports.

(Fuller details may be obtained from the report itself which is published as Industrial Reference Service, Volume 5, Part 11, No. 2, July 1937. Copies may be purchased for 5 cents each from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., or from Field Offices of the Department of Commerce.)

#### TREATED TIMBERS IN BETTER SUPPLY MORE LUMBER NOW AVAILABLE

With more adequate supplies of lumber and preservative chemicals available, production to Aug. 1 of fire, termite and rot resistant wood by ten plants of the American Lumber and Treating Co. exceeded any similar 7-month period since the end of the war, J. F. Linthicum, Chicago, president, announced recently.

The current output of chemically-alloyed "Wolmanized" treated, creosoted and "Minalith" flameproofed forest products rose 9 percent above the same period last year and 51 percent over 1945, he

This high rate probably can be maintained and possibly accelerated during the remainder of 1947, Mr. Linthicum said. While the present seasonal freight car shortage hampers some shipments, more lumber is available today than during the first part of the year, as evidenced by the National Lumber Manufacturers Association's recent statement that "the lumber shortage is over".

Creosote may be a question mark in 1948 but supplies of preservative chemi-

(Please turn to page 288)

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A conical spring that will be free
of coil interference at any height
of compression with the end coils
of compression with the always in parallel relation



This clutch, designed by the Lipe-Rollway Corporation, Syracuse, New York, required a conical spiral wound spring, close in load tolerance and rate. This conical spring had to be free of coil interference at any height of compressed position down to full flat compressed height.

When the springs that were being used proved unsatisfactory, American Steel & Wire Company engineers were called in. And they developed a series of cold wound spiral conical springs for this manufacturer's complete line of clutches. This includes both single and two plate multi-lever heavy duty clutches for commercial vehicles of 2½ tons and greater capacity. Today American Quality Springs are being used 100% as a standard component part of the clutches.

You may not need a spring like this for your product, but this is typical of the solutions we have provided for hundreds of troublesome spring problems.

When you buy springs be sure to get U·S·S American. They are your assurance of the finest quality. If you make your own springs, you'll find American Steel Spring Wire will produce the best results. Remember the *original* cost of springs is usually negligible, but replacement costs run high.

#### AMERICAN STEEL & WIRE COMPANY

Cleveland, Chicago and New York
Columbia Steel Company, San Francisco,
Pacific Coast Distributors
Tennessee Coal, Iron & Railroad Company, Birmingham,
Southern Distributors

United States Steel Export Company, New York
UNITED STATES STEEL

AMERICAN STATES STEEL

U.S.S American Quality Springs

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There are 36 years of experience back of the more than 400 products precision manufactured by Auto-Lite for many industries. The facilities of 26 great manufacturing plants, combined with the "know-how" of Auto-Lite engineers and designers, have won a world-wide reputation for unvarying quality and dependability. A new booklet listing many of the major products of The Electric Auto-Lite Company is available. To obtain your copy write to

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FIGURE 2228
LUNKENHEIMER
NEW 200 LB.
BRONZE UNION BONNET GATE VALVE

# BUILT TO LUNKENHEIMER STANDARDS . . . FOR BETTER SERVICE!

**DESIGNED WITH FULL CYLINDRICAL BODY SECTIONS** to provide maximum resistance against distortion of the valve body and seats due to pipe line stresses and internal pressure strains. Exhaustive tests made under conditions far more severe than those encountered in actual service clearly demonstrate that this design will not distort and will maintain initial proportions and seat tightness.

All parts are heavy and rugged and of the finest materials to insure ample factors of safey against pressure, temperature and operating strains.

Send for descriptive circular No. 534.

#### NOTE THESE FEATURES

Malleable Iron Handwheel-Non-heat, easy, comfortable grip.

Rising Stem—Made of a distinctive silicon bronze alloy, developed and patented by Lunkenheimer. Remarkably wear - resistant, eliminates stem-thread failures. Exceptionally heavy stem head.

Hexagon Head Gland—Permits use of a wrench to loosen gland. Facilitates repacking.

Stuffing Box—Large and deep. Long thread provides so id engagement with packing nut to form a tight joint when fully packed.

Repacking Seats—Repackable under pressure when wide open. Repacking seats above stem thread, perfectly machined.

Bonnet—Union bonnet 2 in. and smaller; bolted bonnet 2½; in. and 3 in. Both provide a strong tight joint; easily disassembled.

Body—Made of high grade bronze which meets the A.S.T.M. Specification B 61. Heavy, rugged proportions and straight through full flow areas.

Double Wedge Disc—Nickel alloy, ball and socket bearing; no internal wedge or pin. Discs readily adjust themselves to taper seats, insuring a tight valve.

Stay-On Discs—Will not drop off stem when assembling valve. Bevelled disc wing guides and body channels make assembly easy.



#### PHONE YOUR LUNKENHEIMER DISTRIBUTOR

Fig. 2228 valves and companion valves are available through your Lunkenheimer Distributor. Call on him for prompt service and the best in valves ... Lunkenheimer.

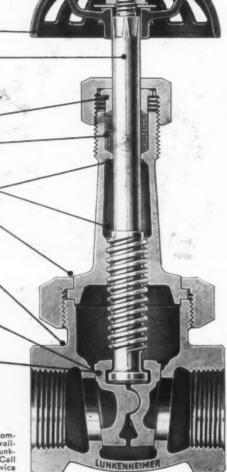


Fig. 2228

ESTABLISHED 1862

#### THE LUNKENHEIMER CO.

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NEW YORK 13, CHICAGO 6, BOSTON 10, PHILADELPHIA 34, EXPORT DEPT. 318-322 HUDSON ST., NEW YORK 13, N. Y.

(Continued from page 284)

cals appear adequate for the industry's 1947 needs, Mr. Linthicum declared. A by-product of coke manufacture, creosote was short in 1946 and the early months of this year as the result of past strikes in the coal and steel industries and a virtual lack of imports. Over 200 wood-preserving plants use it to produce creosoted transmission poles, marine piling and railroad crossties.

Due to declining English coal production and that country's present economic crisis, there is a strong possibility that England will further reduce shipments to the U. S. by burning creosote for fuel, he states. Large-scale expansion of British coke-oven facilities is now underway but will not be completed for many months.

After stopping exports of creosote early in 1942, England resumed shipments to this country in the last half of 1946. However, the total amount received since then is far below normal creosote imports from 1931 through 1940 which averaged 39,668,062 gallons annually or 27.7 percent of U. S. total consumption. he said.

# # # # # BACK OF THE PAPER BOX SITUATION

Some of the manufacturers of paper box machinery tell us that the new commitments they are receiving for equipment more than offset the cancellations recorded, for which reason their deliveries are approximately as far behind as at the end of the war.

While machines are being made right along, deliveries are highly unsatisfactory to both the manufacturers and customers, with little or no signs of improvement. Many machines ordered during the war days are still in process of production; work on some has not been started. At the close of hostilities, it was naturally assumed that increased labor staffs would accelerate production all along the line and while more men are employed by the respective machine companies, the output increase seems negligible.

Most machine builders are dependent upon other manufacturers for parts to complete assembly of a line of machines. These parts straggle in, resulting in thousands of dollars of equipment cluttering assembly floors, seemingly never being ready for shipment. Apparently nothing can be done about it. Each producer up and down the line is delayed because of the failure of some other manufacturers to deliver this and that gadget or raw material, a vicious circle resulting.

Boxmaking equipment was kept in motion during the five years of the war, being idled only if it figuratively fell apart. Much equipment needed overhauling when the war demand for boxes materialized, as all users do not keep their machines in top running order, as they should, and are therefore in desperateneed to replace equipment now entirely antiquated. Used machines "as is" and

(Please turn to page 290)



# FOR OVER 65 YEARS THE FINEST QUALITY

### SOLVAY

# PRODUCTS FOR THE TEXTILE INDUSTRY

Ammonium Chloride

Caustic Potash

Caustic Soda

Liquid Chlorine

Potassium Carbonate

Soda Ash

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Sodium Nitrite

Calcium Chloride

SOLVAY SALES CORPORATION . Alkalies and Chemical Products Manufactured by The Solvay Process Compan 40 Rector Street, New York 6, N. Y.



# CULLMAN Stock SPROCKETS

will do the job-Better!

With 2,000 types to select from—you are almost certain to find just the size you need for practically every transmission requirement—ready for immediate delivery. Cullman Sprockets—produced by fast, low-cost, high-precision methods—assure top operating efficiency. "Specials," too, are quickly available—made up by exclusive Cullman methods and specialized equipment.



Write today for tree catalog containing useful data and helpful facts for sprocket users. It lists dimensions.

## CULLMAN WHEEL COMPANY 1352-P Altgeld Street Chicago 14, Illinois

### Hanson-Van Winkle-Munning Company

Announces the PR PLATING PROCESS

(The Periodic Reverse Current Electroplating Process)

The PR Plating Process, an engineering development of the Westinghouse Electric Corporation, involves plating in the conventional fashion for a given length of time, followed by current reversal for a short period. Repetition of this cycle provides the following advantages:

- Increased rate of plating
- 2 Improved surface brightness
- 3 Increased density of deposited metal
- 4 Improved metal distribution
- 6 Increased smoothness of deposit
- **6** Decreased porosity
- Better corrosion protection
- (3) A method for obtaining heavier deposits



Typical Electronic Timer-Contactor Unit which effects current reversal at the plating tank.

Licensing Agreements now available for issuance. Write:

**3639** 

#### HANSON-VAN WINKLE-MUNNING COMPANY

MATAWAN, NEW JERSEY

PLANTS: MATAWAN, NEW JERSEY • ANDERSON, INDIANA
SALES OFFICES: ANDERSON • CHICAGO • CLEVELAND • DAYTON • DETROIT • GRAND RAPIDS
MATAWAN • MILWAUKEE • NEW HAVEN • NEW YORK • PHILADELPHIA • PITTSBURGH • ROCHESTER
SPRINGFIELD (MASS.) • STRATFORD (CONN.) • SYRACUSE



(Continued from page 288)

rebuilt are being "snapped up" upon being offered. It is a bit early to estimate the effect the new steel prices will have on the selling prices of machines, but that some price increases will be announced by machine builders in the not too distant future is more than a probability. We shall see.—National Paper Box Manufacturers Assn. Bulletin

#### 1 1 1 LIGHTING COURSE

A 10-week course in Lighting Controls and Wiring sponsored by the Illumination Group of the New York Section of the A. I. E. E., will be given every Wednesday evening from 7 to 9 P.M., starting October 1, 1947. Classes will meet at 39 West 39th Street, New York City. Cost of the course will be \$9.00 for A.I.E.E. members and \$18.00 for non-members. Further details about the course may be had from Mr. E. H. Salter, Electrical Testing Laboratories, 2 East End Avenue, New York 21, N. Y.

#### G. E. DISTRIBUTING MATERIAL ON USE OF INFRARED LAMPS

How manufacturers may use infrared lamps for heating, baking and drying processes is the story contained in kits of informative material now being distributed to electric utility companies by the General Electric Lamp Department. Included with the material is a 25-minute sound slide film in color entitled, "Infrared Lamps for Better Production", and literature for distribution to audience groups.

The sound slide film (not a movie) makes clear the different kinds of infrared radiant energy which can be applied to industrial processes and describes how infrared lamps have speeded production, improved quality of products, improved working conditions, and saved factory space for a wide variety of products.

Interested manufacturers are requested to make arrangements with their local electric companies.

# INDUSTRY BOOKLETS ON STAINLESS STEEL AVAILABLE FROM RYERSON STEEL-SERVICE

Recently published are three booklets on Allegheny Stainless Steel as used in, 1) the Meat Packing Industry, 2) the Petroleum Industry and 3) the Dairy Industry.

Each booklet covers specific applications, performance records, etc., pertaining to the industry. The literature also includes information on corrosion resistance, physical properties, fabricating procedures, and forms of Allegheny Stainless Steel available.

Stainless fabricators, manufacturers of stainless equipment and firms in the meat, petroleum or dairy industry may secure copies from Joseph T. Ryerson & Son, Inc., distributors of Allegheny Stainless Steel from warehouse stocks. When writing state the particular booklet or booklets wanted, addressing the company at Box 8000-A, Chicago 80, Ill.

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# -remember this SYMBOL of SERVICE



NOW, from our nine conveniently located warehouses, we can make prompt deliveries of U·S·S Stainless Steel. While it costs no more than other stainless steels—its use assures uniform fabrication and the finest performance in service. So, if you need Stainless Steel quickly—or if you require High Strength Steels, Alloy Steels, Carbon Steels, Machinery, etc., get in touch with our warehouse nearest you.

Whatever you must have in steel, you can rely on our every effort to give you prompt, efficient service. Telephone, wire or write.

# UNITED STATES STEEL SUPPLY COMPANY

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BALTIMORE (3) Bush & Wicomico Sts., P. O. Box 2036 Glimor 3100

BOSTON 176 Lincoln St., (Allston 34), STAdium 9400

P. O. Box 42

CLEVELAND (14) 1394 East 39th St. HEnderson 5750

LOS ANGELES (54) Slauson Avenue LAfayette 0102

(Between Alameda and Sante Fe)

MILWAUKEE (1) 4027 West Scott St., P. O. Box 2045 Mitchell 7500

NEWARK (1), N. J. Foot of Bessemer St., Bigelow 3-5920
P. O. Box 479 REctor 2-6560—BErgen 3-1614

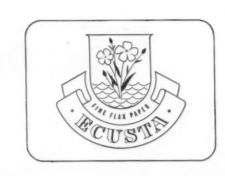
P. O. Box 479 REctor 2-6560—BErgen 3-1614
PITTSBURGH (12) 1281 Reedsdale St., N. S. CEdar 7780

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UNITED STATES STEEL

# Ecusta Papers Make Messages Look IMPORTANT



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LINEN FLAX WRITING

FINE FLAX AIR MAIL

FLAX-OPAKE BIBLE AND PRINTING PAPERS

BOXED TYPEWRITER PAPERS

Ecusta Paper Corporation

PISGAH FOREST, NORTH CAROLINA



E. Reeves, Purchasing Agent of the Buckeye Tools Corporation of Dayton, Ohio, manufacturers of air driven and 180 and 360 cycle 220 volt electric driven portable sanders, grinders, drills, reamers, nut runners and other types of portable hand tools, furnished the accompanying forms for use in the Forms Forum.

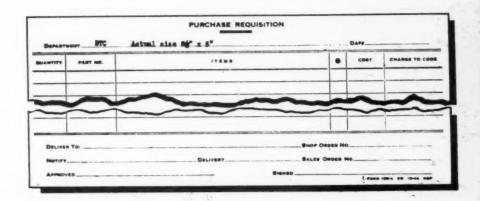
His department also is responsible for inventory control, the shipping and receiving stock crib, and the issuing of production orders, hence this lot of forms differs from systems previously appearing in this section. They should prove of interest to the purchasing agents of other companies who have similar responsibilities.

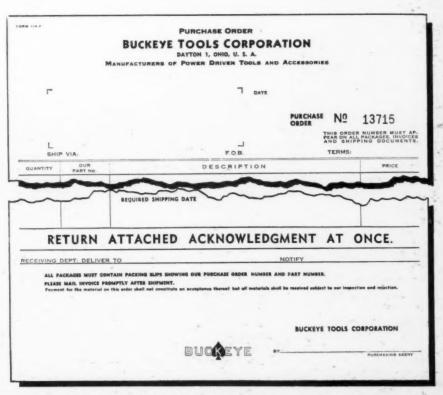
The first of the forms is the Purchase Requisition. Approval of routine purchases is made by the purchasing agent. Where requisition calls for materials not usually purchased, or equipment, regardless of amount, approval must be made by the company treasurer. In addition to the Shop Order number, space is also provided on this form for the Sales Order number to which the requisition applies.

### A Simple Purchase Order

The Purchase Order, it will be noted, is a simple form, and accordingly will appeal to many purchasing agents. Five copies are made which include vendor's Acknowledgment copy, one for the purchasing department, one for receiving, and a tissue copy for the purchasing department's numerical and permanent record file.

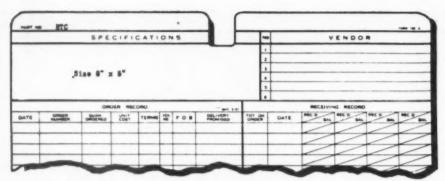
Mr. Reeves states that the vendor's acknowledgment form has proved especially useful where vendors have no regular acknowledgment form, and the in(Please turn to page 294)



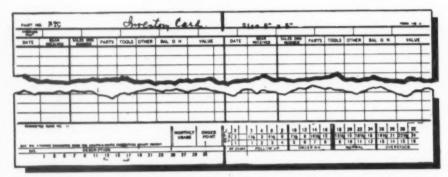


The vendor's acknowledgment copy of purchase order is reproduced on page 296.

NG



When low-limit is reached, Specification sheet is delivered to purchasing department.



These forms have proved quite valuable from the standpoints of time-saving, accuracy and efficiency.

PART NO. BTC

SHORTAGE SHEET

DATE QUAN. SHORT SALES ORDER NO.

3" x 5"

Shortage sheet which is used for recording back orders.

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(Continued from page 293) sertion by the vendor of his order number in the space provided saves time in follow-up by 'phone or wire

The rest of the forms include Stock Requisition, Returned to Stock, Receiving and Inspection Report, Returned Goods Receiving Report and Shop Order. These forms are self-explanatory.

### Inventory Control Forms

For inventory control, the Inventory. Specification Card and Shortage Sheet, all of which are reproduced, are used. Mr. Reeves states that for time-saving, accuracy and efficiency, these forms have proved quite valuable. These are maintained in a Kardex file, the "Inventory Card" in one pocket and the Specification Card in the preceding pocket so that both are visible when reference or posting is made to either. As you will note from the forms, this record gives complete information on any of the parts used in production.

The record is complete as to identification, specification, purchase order data, unit costs, vendors, receiving record, balance, monthly usage, order point, and sales order number.

### Use Low-Limit Basis

In describing the system, Mr. Reeves says—"We work on a "Low Limit" basis on inventory. When this point is reached the clerk pulls the Specification sheet and delivers it to the purchasing department.

"We take these specification cards to the Kardex files when convenient and by referring to past usage on the inventory sheet, determine the proper quantity to order. I indicate the vendors who are to be written for quotations or to whom the order is to be sent by inserting vendor's number in the columns provided. The requisition may then be typed from the information on the Specification card, the date, order number, and quantity ordered being inserted before the card is filed.

"The Specification card also carries information on quantities and types of steel or other raw materials required for the parts manufactured by us. This information is required for production orders, and the information is posted as to quantity, etc., the same as for purchase orders."

### The Shortage Sheet

The "Shortage Sheet", which is filed with the cards above described, is used for recording back orders by the clerk on the perpetual Kardex record. "For example", explains Mr. Reeves, "if we receive an order from the sales department calling for 20 pieces and have only 10 available for shipment, we back-order

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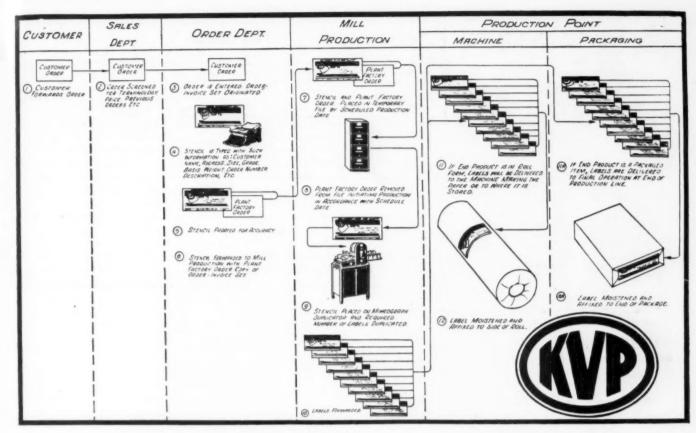
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# Label Problems Solved!

Flow chart shows how Mimeograph brand duplicator and supplies helped solve complex labeling problems for leading paper manufacturer

How do you want your paper?

Parchment . . . waxed . . . bond . . . high-grade special wrappings . . . grease-proof and household specialty papers—Kalamazoo Vegetable Parchment Company, Kalamazoo, Michigan, makes them all.

And, naturally, with this variety of production—and a variety of packages, by rolls or by customer-specified cut sizes and quantities—KVP had a complex labeling problem.

They turned to the Mimeograph brand

duplicator and form-topped Mimeograph brand stencils for help.

And they got help—plus important savings in paper-work preparation, time and labor running to thousands of dollars annually.

The flow chart above shows the recommendations of our duplicating experts and the solutions to KVP problems. And here's why the solutions were successful:

- Clear, easy-reading, black-andwhite label copy with permanent, rubproof Mimeograph brand ink to resist adverse handling, shipping, and storage conditions.
- 2. Centralized preparation of labels from master stencil. Gummed label stock is automatically fed by

the Mimeograph brand duplicator.

- Form-topped Mimeograph brand stencil sheets for accurate positioning of customer's order data right on the finished label. Stencil can be filed and used again.
- 4. Plenty of copies of each label whether customer's order calls for tens or hundreds of packages. (KVP label requirement averages 50 copies, sometimes goes as high as 4,000 copies.)

This paper-work problem and its solution are typical of the results Mimeograph duplication and the work of our duplicating experts are securing for leading companies everywhere. Call the distributor nearest you, or write us for full information on how we can work with you.



FREE! Complete case study

of the KVP tag and label problem—including the flow chart reproduced above—plus samples of the finished labels and the form-topped Mimeograph brand stencil sheet that did the work. It's free!

Clip and mail the coupon today!



A. B. DICK COMPANY, Dep. P-1047 720 West Jackson Boulevard Chicago 6, Illinois

Send me a copy of your case study of the KVP tag and label problem.

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The Mimeograph brand duplicator

A. B. Dick Company, Chicago

MIMEOGRAPH is the trade-mark of A. B. Dick Company, Chicago, registered in the U. S. Patent Office.

NAME		 	 	 	 										
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CITY		 	 	 		 	SI	A	T	Ε.					

(Forms Forum continued from page 294)

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Above is the Foreman's Record Form which appears on back of Shop Order.

Vendor's acknowledgment provides space for showing his order number.

10 pieces and enter this quantity along with the sales order number on the blue shortage sheet. When the next shop or purchase order is completed and these parts become available, we can immediately, having filed the sales orders by numbers, locate it and issue the parts. The card is used whenever a shortage develops either on a parts order or on a tool order where one or more parts are short.

The Kardex files are also used for compilation of cost figures, the cards bearing the typed or pen title "Cost Summary". Usually this heading is typed at the time the production order is written. Daily time is posted and a total is taken at the end of each month to determine the value of work in process.

One very desirable feature of this form, according to Mr. Reeves, is the "estimated hours" block. "We determine by reference to the last closed summary or by information from our engineering department", he states, "the number of hours required for each lot. We advise the production department when an order is finished before the estimated time has elapsed, and also advise them promptly when the estimated time has been exceeded so they can immediately check the tooling and routing. We can also readily determine by deducting time already spent from the estimated time, the number of hours remaining for our production department."

(Forms Forum continued on page 298)

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	REQUIRED SHIPPING DATE			
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Jones: But this is quite a surprise, girls. Whatever in the world . . .  $\ref{grad}$ 

Gloria: Because we're positively thrilled with our new desks and chairs. And you get the credit!

Lib: But definitely! Real, rich-looking wood furniture like the boss's. No "caste system" for our office, eh Jonesy?

Jones: Ahem! Now girls . . .

**Gloria:** No kidding. We're tickled pink with the new equipment. Now that's what I call "employee relations."

Lib: The office really looks modern. And wood is nice to work with. Now I will get those cost reports out for you on time, I promise!

Jones: I'll believe that when I see them!

**Gloria:** But, gee, Jonesy, we were kind of surprised. Because you have been yelling about how expenses were going up on everything.

Jones: Don't think this new furniture is extravagance. Why, my dears, we bought those old desks you girls were using 20 years ago. They've done double duty. Wood lasts for years!

Lib: But that lovely, rich-looking walnut.

Jones: Wood office furniture isn't a bit more expensive. And the boss is as pleased with the way the place looks as you are.

Gloria: You should get an orchid from the "Board", too.

Jones: But what will I do even with this one?

**Lib.**: Give it to Mrs. J. Haven't you heard about good wife-relations, too?

For better employee and customer relations modernize with wood office furniture for everybody!

See your dealer now.



# Mood OFFICE FURNITURE Institute

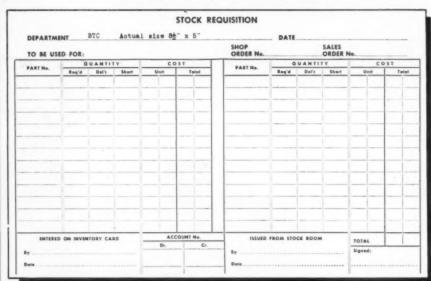
America's progressive manufacturers of commercial deaks and chairs . . . cooperating in product improvement . . . in the interest of greater office comfort, beauty, morale.

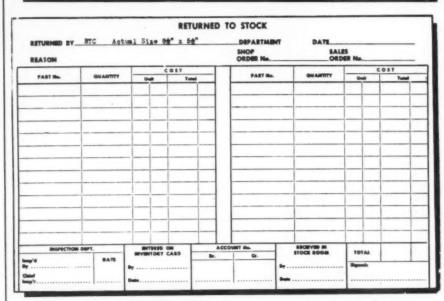


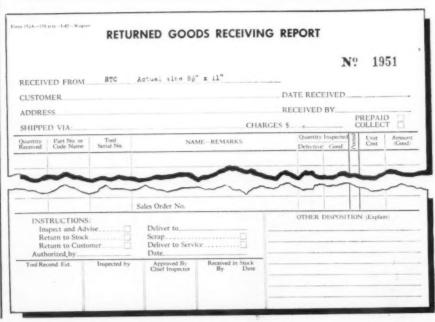
Their symbol is your guarantee of satisfaction!

(Forms Forum continued from page 296)

Stock Requisition, Returned to Stock, and Returned Goods Receiving Report used by the Buckeye Tools Corporation





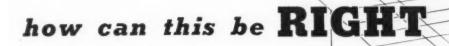




Yes, you go along with your mail. Your signature, your thoughts and the paper — all three — represent you. Make certain your message is conveyed on the finest paper. For, like a well-designed package inviting reception to its contents, fine letterhead paper creates a wholesome reception . . . enhancing what you say, reflecting your good taste. Hold the letters you sign to the light. See if the watermark says "all three" as portrayed below—that's Fox River's quality guarantee for the finest in letterhead paper. Ask your printer. Fox RIVER PAPER CORPORATION, APPLETON, WISCONSIN.

Cotton Fibre Bond, Ledger, Onion Skin "The more Cotton Fibre the finer the Paper"

OUR WATERMARK is your quality guarantee
Look through————————————————————————————————————
1 COTTON FIBRE
2 COTTON FIBRE CONTENT
3 MADE by Fox River



and this be WRONG?

EASY! The first hand is writing an original notation —the second is re-copying it. And in any modern business, re-copying is WRONG! It wastes time, it wastes money, it's completely unnecessary—and it leads to errors.

Uarco combines business forms so that one form serves many departments. A single writing can turn out as many as 20 copies, neatly pre-assembled to save time and bother. That way, all writing is *productive* writing—no money is spent re-copying.

Ask a Uarco representative to make a survey of your requirements. That's easier than taking your own time for the job, and it does not obligate you in any way. UARCO INCORPORATED, Chicago, Ill.; Cleveland, Ohio; Oakland, Calif.; Deep River, Conn. Offices in All Principal Cities.



For Pustance... you may find Uarco E-Z-Outs your biggest time-saver. Use them in typewriters or for handwritten records—they put an end to carbon fuss. Copies are neatly held together for later additions, then detached with one easy motion.



**BUSINESS FORMS** 



AUTOGRAPHIC REGISTERS
AND REGISTER FORMS







RS SINGLE SET FORMS

CONTINUOUS-STRIP FORMS
FOR TYPEWRITTEN AND BUSINESS MACHINE RECORDS

### UNBREAKABLE CAST IRON LETTER MOISTENER



An unbreakable cast iron moistener for letters, stamps and labels, with black wrinkle finish and chromium cover, has been added to the line produced by E. W. Pike & Co., Elizabeth 3, N. J. The moistener, Model 3c, has a rubber-padded base and a 3" adjustable brush which is self-cleaning. There are no moving parts.

# 1 1 1 HANGING FILE FOLDERS WITH ADJUSTABLE TAB

Guide System & Supply Co., 335 Canal Street, New York 13, N.Y., has introduced the Gussco "Guide-O-Folder", a hanging file folder with adjustable metal Metal strips are permanently anchored to the folder, enabling it to be dropped into the file, and to glide on the metal frame. The frame is adjustable to fit file drawers of any make, and does not have to be cut to fit. One-fifth and one-third cut adjustable metal tabs can be used in any of the five regular positions or in any combination, including Miscellaneous or name headings. The tabs slant at a 45-degree angle, providing better visibility, and are said to last the life of the folder.

# NEW BOSTON RANGER PENCIL SHARPENER

Illustration shows the new Boston Ranger, double bearing pencil sharpener, manufactured by Hunt Pen Co., Camden, N. J. All metal-chrome plated — for strength, it has a point adjuster that



New All-Metal Boston Sharpener

gives a choice of thin, standard or semi-blunt points. The pencil guide permits sharpening of all size pencils. Boston twin milling cutters contain 30 cutting

(Please turn to page 302)

# Levelcoat \*

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	Rochester
HartfordThe Rourke-Eno Paper Co., Inc.	Syracuse Paper Service, Inc. Tray Troy Paper Corporation
West Haven Bulkley, Dunton & Co., Inc.	troytroy raper Corporation
DISTRICT OF COLUMBIA	NORTH CAROLINA
WashingtonThe Barton, Duer & Koch Paper Co.	Charlotte
FLORIDA	Greensboro
Jacksonville	NORTH DAKOTA
Migmi Knight Brothers Paper Company	Fargo
Orlando	OHIO
Tallahassee	Cincinnati
Tampa Knight Brothers Paper Company	ClevelandThe Petrequin Paper Company
GEORGIA	Columbus The Science Recore Company
Atlanta	Columbus
IDAHO	OKLAHOMA
BoiseZellerbach Paper Company	Oklahoma CityCarpenter Paper Company TulsaTayloe Paper Company of Oklahoma
ILLINOIS	
Chicago Berkshire Papers, Inc.	OREGON
Chicago Chicago Paper Company	EugeneZellerbach Paper Company
Chicago Midland Paper Company	PortlandZellerbach Paper Company
Springfield	PENNSYLVANIA
INDIANA	Philadelphia
Indianapolis	Philadelphia D. L. Ward Company
IOWA	Philadelphia D. L. Ward Company Pittsburgh The Chatfield & Woods Co. of Pa.
	RHODE ISLAND
Des Moines Carpenter Paper Company Sioux City Carpenter Paper Company	
	Providence
KANSAS	SOUTH CAROLINA
Topeka	GreenvilleDillard Paper Company, Inc.
Wichita	TENNESSEE
KENTUCKY	Chattanooga
Lauisville	Chattanooga
	Memphis
LOUISIANA	NashvilleBond-Sanders Paper Co.
Baton RougeLouisiana Paper Co., Ltd.	TEXAS
New Orleans	
ShreveportLouisiana Paper Co., Ltd.	Austin
MARYLAND	Dallas
Baltimore Baltimore Paper Company, Inc.	Fort Worth
MASSACHUSETTS	Maringen
Boston Carter, Rice & Company Corp.	Houston
Springfield Rulling Dunton & Co.	Lubback. Carpenter Paper Company San Antonio
Springfield	
	UTAH
MICHIGAN	Salt Lake CityZellerbach Paper Company
DefroitSeaman-Patrick Paper Co.	VIRGINIA
Detroit	Richmond
MINNESOTA	
Duluth John Boshart Paper Company	WASHINGTON
Minneapolis	SeattleZellerbach Paper Company
St. Paul	SpokaneZellerbach Paper Company
	Walla Walla Zellerbach Paper Company Yakima Zellerbach Paper Company
MISSOURI	YakimaZellerbach Paper Company
Kansas City	WISCONSIN
St. Louis	MilwaukeeThe Bouer Paper Company
Jr. Louis	

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NEVADA RenoZellerbach Paper Company	
NEW JERSEY	
NewarkJ. E. Linde Paper Company NEW MEXICO	
Albuquerque	
NEW YORK	
Albany Hudson Valley Paper Company	
Brooklyn A. Price & Son, Inc. Buffalo	
New York. Bulkley, Dunton & Co., Inc. New York. The Canfield Paper Co. New York. Forest Paper Company, Inc.	
New YorkForest Paper Company, Inc.	
New York J. E. Linde Paper Company New York A. Price & Son, Inc.	
New York Royal Paner Corporation	
Rochester Paper Service, Inc. Syracuse Paper Service, Inc.	
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Cincinnati	
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RHODE ISLAND Providence	
SOUTH CAROLINA Greenville Dillard Paper Company, Inc.	
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San Antonio	
UTAH Salt Lake CityZellerbach Paper Company	
VIRGINIA Richmond	
WASHINGTON	
SeattleZellerbach Paper Company	
SpokaneZellerbach Paper Company Walla WallaZellerbach Paper Company	
Waila Walla Zellerbach Paper Company Yakima Zellerbach Paper Company	

### EXPORT AGENTS

American Paper Exports, Inc., New York, U. S. A. Cable Address: APEXINC—New York

If our distributors cannot supply your immediate needs, we solicit your patience. There will be ample Levelcoat Printing Papers for your requirements when our plans for increased production can be realized.

# KIMBERLY-CLARK CORPORATION . NEENAH, WISCONSIN

122 East 42nd Street, NEW YORK 17 155 Sansome Street, SAN FRANCISCO 4

MONTANA

8 South Michigan Avenue, CHICAGO 3 22 Marietta Street, N. W., ATLANTA 3

TRADEMARK



Levelcoat advertisements appear in four colors in Business Week, Nation's Business Colors in Business Week, and Fortune.
United States News, Newsweek, and Fortune.

# Test your word knowledge

of Paper and Printing



# 1. Blanc Fixe

- ☐ Material used as filler in paper
- Fixative used in etching
- ☐ Pulp bleach



# 3. Pop Test

- ☐ Strength test for paper
- ☐ Analysis of bleach liquor
- ☐ Test for purity of pulp



# 2. Format

- ☐ Fiber distribution in paper
- ☐ Special kind of press make-ready
- ☐ General appearance of a printed piece



### 4 M

- ☐ Half an en
- ☐ Roman symbol for 1000
- Fourth letter in the printer's alphabet

## ANSWERS

**Blanc Fixe** is material used as filler in paper. Filler and surfacing materials used in Levelcoat\* printing papers are required to pass strict tests of purity and whiteness. That's one reason Levelcoat is brighter consistently.

2 Format is the general appearance of a printed piece – its size, style, and shape. Even with the most distinctive format, fine printing achieves its full effect only on fine paper. And for pieces which deserve fine paper, specify a grade of Levelcoat.

**3 Pop Test** is a strength test for paper. In perfecting Levelcoat printing paper some 700 checks and instrumentation procedures may play a part. No wonder, then, that with printers who are perfectionists themselves, this excellent paper is so popular.

4 M is the Roman symbol for 1000. Check 1000 sheets of Levelcoat on the press. Or 10,000. Or 100,000. You'll find them uniform in texture, in smoothness, in strength. And in printed results which say indisputably, "This is Levelcoat!"



Levelcoat\* printing papers are made in the following grades: Trufect†, Kimfect†, Multifect† and Rotofect†.

\*TRADEMARK †T. M. REG. U. S. PAT. OFF.



KIMBERLY-CLARK CORPORATION

NEENAH, WISCONSIN

1872 - SEVENTY-FIVE YEARS OF FINE PAPERMAKING - 1947



# ALWAYS A GREAT DRAWING CARD

Every company check you write can be a business-drawing card provided it has *personality*.

Reynolds and Reynolds has designed check and voucher systems of all types, for some of the nation's largest check users. They are prestige-builders that reach thousands of business men daily.

We'll do the same for you using our exclusive, protected Reynoco Safety paper—or a beautiful personalized pantograph. Either method results in checks that are eye-luring and extra safe!

For one-writing payroll systems, we offer smudge-resistant hot wax-base carbon strips. And our voucher systems with one-time carbon interleaved, cut down writing time and costs.

Give your secretary a memo now to write us for further information about *protected* personalitypacked checks.

CHECKS WITH PERSONALITY BY



Established 1866

SALES OFFICES IN MANY PRINCIPAL CITIES

# ROYAL'S ROYTYPE DIVISION OPENS NEW SUPPLIES PLANT

In a move aimed at expanding carbon paper and ribbon production to meet heavy demand, the Royal Typewriter Company recently opened a three-floor, 75,000 square-foot plant at 1031 New Britain Avenue, West Hartford, Conn., exclusively for the manufacture of Roytype business machine supplies.

In the new plant, Roytype has separate ribbon, carbon paper, hand-cleaner and type-cleaner departments, with individual shipping departments, all coordinated through a central main office.

# C. B. WIDNEY JOINS SHEPPARD ENVELOPE COMPANY

C. B. Widney, for the last fifteen years active in envelope sales in New York City, has been appointed assistant sales manager in charge of sales in lower New York, New Jersey, Maryland, Pennsylvania and Ohio, for the Sheppard Envelope Company, according to an announcement by N. Myra Glazier, president.



C. B. Widney

Mr. Widney has been head of the Widney Envelope Company since 1940, and the facilities of that company at 25 East 26th Street will be taken over by Sheppard along with the services of Eugene A. Cahill and Frank O. DeBlois whose present offices at 853 Broadway will be discontinued. Mr. Widney's business career dates from the first world war and his joining the Pennsylvania Railroad immediately on discharge. Later whileassociated in insurance business, Mr. Widney jointed Pitney Bowes of Stamford, Connecticut in 1927 and went into the envelope business in 1929 when hejointed the staff of Transo Envelope Co. in Chicago. Later associations were with Standard Envelope Mfg. Co. of Cleveland and E. J. Spangler Co of Philadelphia. becoming district sales manager of the latter concern in 1933

# MARCHANT STARTS CONSTRUCTION OF FACTORY ADDITION

Start of construction of an addition to the main factory of Marchant Calculating Machine Company, Oakland, Calif., which is designed to increase production capacity approximately 100 per cent is announced by Edgar B. Jessup, President.

(Please turn to page 304)



# ...nothing can beat an UNDERWOOD SUNDSTRAND Adding-Figuring Machine

Her fingers ripple over the 10-numeral keyboard ...touch a motor bar...and there's her total.

It's as simple as that ... and as fast.

The keys of the Underwood Sundstrand are arranged in natural sequence under the finger-tips of the right hand. Even untrained operators pick up the "touch" method...after a few minutes practice.

This machine is quiet, too. Key action has been cushioned...operating noises muffled. There's no annoying jar or clatter to hinder concentration. As a result operators are more relaxed...and more accurate.

Yes, for speed, simplicity, accuracy in adding and figuring you're sure to agree... there's nothing like an Underwood Sundstrand. For a complete demonstration call your nearest Underwood representative today!

# 5 Reasons WHY YOU should say "Underwood Sundstrand"

- 1. SPEED. World's fastest keyboard. Only 10 numeral keys under the finger-tips of one hand.
- 2. EASY TO LEARN. No long training period for operators. Even untrained personnel learn the "touch" method in a few minutes.
- 3. NO HEAD SWINGING. Operators keep their eyes on their work...not the keyboard.
- 4. MADE IN MANY MODELS. Made in sizes and models to fit any business... large or small.
- 5. WORLD LEADER. Backed by 50 years of craftsmanship and research in producing typewriters, adding-figuring and accounting machines which "Speed the World's Business." Sales and service everywhere.



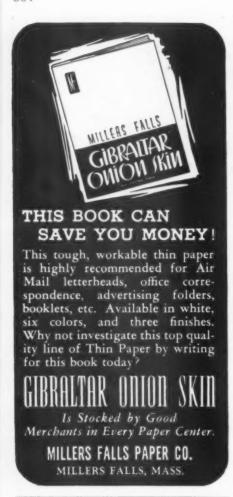
# **Underwood Corporation**

Adding Machines . . . Accounting Machines . . . Typewriters . . . Carbon Paper . . . Ribbons and other Supplies

One Park Avenue New York 16, N. Y.

Underwood Limited, 135 Victoria St., Toronto 1, Canada Sales and Service Everywhere

Copyright 1947, Underwood Corporation





(Continued from page 302)

The new structure and installed equipment will represent an investment of approximately \$350,000. The addition extends along the entire southwest side of the main factory building, will provide space for expansion of the principal departments for production of parts.

Construction work will be completed by early November and it is expected the expanded facilities will be in operation around the first of the year. All necessary machinery and equipment for the expansion has been purchased and most of it delivered.

### ROYAL TYPEWRITER EXPANDS CENTRAL EXECUTIVE OFFICES

The Royal Typewriter Company has expanded its central executive offices at 2 Park Avenue, New York, N. Y., with the leasing of an additional 20,000 square feet of floor space within the building, according to an announcement by Maxwell V. Miller, president.

The additional space has enabled Royal to make allowance for enlarged and improved executive offices and the re-location of many departments to increase the efficiency of operation. Considerable space has been allocated to ease the congested storage and shipping facilities at the company's Hartford, Conn. factory, brought about when a backlog of demand was built up during wartime non-production.

# NATIONAL BLANK BOOK COMPANY PERSONNEL CHANGES

Chicago: John J. Ramma has been promoted to metropolitan sales manage:, for the city of Chicago, state of Wisconsin, the Upper Peninsula of Michigan, and Northern Illinois. Reed Ferguson has been named sales representative in the city of Chicago and South Shore. Norman Hanson is sales representative in Wisconsin, the Upper Peninsula of Michigan, and Northern Illinois. John A. Hess also represents National in the city of Chicago, and along the Chicago North Shore.

San Francisco: Walter Waldvogel has been transferred to the West Coast from the Chicago office.

New York: William Lindenberger has been appointed New York manager.

# BROCHURE ON CONTINUOUS FORMS

Copy of brochure displaying the various uses of continuous forms with tabulating machine equipment, particularly for invoice combinations, inventory control, payroll applications, sales records, production control, cost control, purchasing control, and personnel records, is available from Uarco Incorporated, 5000 South California Avenue, Chicago 32, Ill. Title of the brochure is "For Faster, Better Tabulator Operations."

(Please turn to page 306)

# We are National HEADQUARTERS for

# NKS

G G

SPECIAL PURPOSE STAMPING INKS for non-absorbent surfaces CEL-WAX INK • OPAQUE INK INDELIBLE INKS

Made by skilled specialists who have made this a lifelong profession and whose formulae and methods are strictly modern and progressive.

- ALSO -

"Victory"

Stamp Pads and Stamp Pad Inks Office Machine Oil

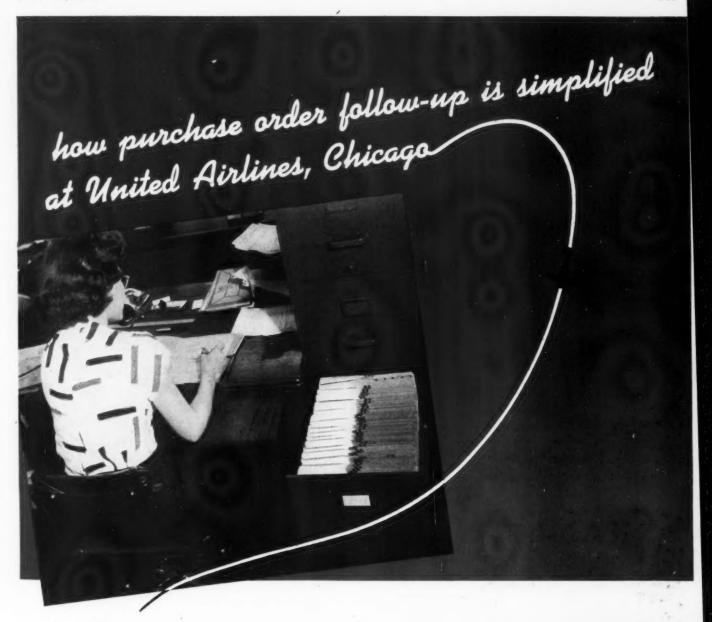
WRITE FOR DETAILS

LUTHER INK & STAMP PAD CO. Fulton and First Streets Elizabeth 1, New Jersey

Phone: El. 2-4727-8

IF YOU ARE NOT NOW
RECEIVING A PERSONAL
COPY OF PURCHASING
EACH MONTH . . .

—drop a line to Reader Service Department, Purchasing, 205 East 42nd St., New York 17, and we will enter your subcsription promptly—price \$4 for one year. \$7 for two years You will then get your copy of PURCHASING promptly and will be able to clip the valuable articles in it for your personal reference files.





Simplification has created savings in time and clerical work at United Airlines, Chicago, since they started using Remington Rand Visible Follow-Up Folders for purchase order control.

• Prior to

utilizing Visible Follow-Up Folders, it was necessary for a buyer to go through every folder to check on possible follow-up action. Today, important follow-up dates are calendared by colored, sliding signals in the visible tip of each order folder. The position of the signal on the date scale tells the buyer, instantly, which orders require follow-up on any given date, without having to remove the folder from the file. This simple, automatic and accurate system insures completion of any scheduled order on the desired date.

• Since all records and correspondence pertaining to each order are filed together in the folder, the need for checking through additional files for complete information on any order is eliminated. Then, too, Visible Follow-Up Folders are economical—they may be used over and over again for new orders by simply changing

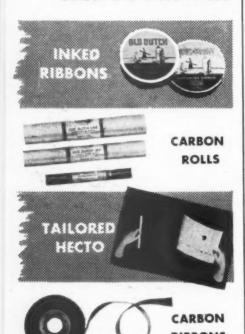
the removable title inserts. • For more detailed information on how the advantages of Visible Follow-Up Folders can be applied to your organization, call our nearest representative or write direct to Remington Rand Inc., Systems Division, 315 Fourth Avenue, New York 10, New York.





# "OLD DUTCH" PRODUCTS

for Every Duplicating, Carbon and Ribbon Need





# WATERS & WATERS BRANCH

St. Louis, Mo.
San Francisco, Cal.
Burlington, N. J.
Los Angeles, Cal.

# SOUNDSCRIBER INTRODUCES IMPROVED MACHINE

Soundscriber Corporation, New Haven, Conn. has introduced its improved electronic disc dictation machine, known as "Series Four", based on seven years' research into Soundscriber performance in actual office and field practice.



Desk model transcriber with scft speaker hearing device

The Soundscriber system incorporates electronics, plastics and turntable disc rotation, and is designed to serve all phases of business procedure. The recorder is styled in two models: the desk model, finished in walnut, with a built in loudspeaker and a choice of either executive or hand microphone; and the portable model, finished in leather or Fabrikoid covered case, and built in speaker with a choice of extension or hand microphone.

The secretary's machine, the transcriber, has a choice of three listening devices, the soft speaker, Toneband, or stethoscope-type Monoset, and provides instantaneous start-stop and accurate backspacing.

# 7 7 7 WATERLESS HAND CLEANSER

Ex-It is the name of a waterless hand cleanser developed by the Phillips Process Co., Inc., manufacturers of carbon papers, and typewriter ribbons, 192 Mill St., Rochester New York. The maker states it contains no grit or abrasive to irritate the skin. It liquifies quickly on the hands and removes all dirt, grease, paint, tar, rubber cement, carbon paper and ink stains. It is simply rubbed into the skin and wiped off with a paper towel or a piece of cloth. Sample jar will be furnished on request.

# PLASTIC COVERED FOAM RUBBER OFFICE CUSHION

Foam rubber office cushion, covered with woven plastic that is said to be dust proof, vermin proof, non-fading and non-combustible is a product of the Brewster Manufacturing Co., 1274 Flatbush Ave., Brooklyn 26, N. Y. The fabric is impervious to stain or ink spots and dust and grime can be wiped off with a damp cloth. The cushion is filled with long-life resilient foam rubber, and never sags out of shape, according to the manufacturer. Two models: No. 27 KL (executive) 17 x 18, and No. 24 KL (steno) 14 x 15.

# STENCIL DRAWING SHEETS FOR IMPROVED ART WORK

Shallcross stencil drawing sheets are especially treated cushions that are used when writing, ruling, drawing, lettering or shading on stencils. Used beneath the stencil, either in place of or in conjunction with the writing plate, the sheets are said to enable the user to get better art work and signatures.

The drawing sheet picks up the stencil coating, giving better displacement without excessive stylus pressure, reducing the possibility of pulling or tearing the stencil in an attempt to get a full print.

A sample sheet may be obtained by writing on a business letter head to The Shallcross Company, 48th and Gray's Ferry Road, Philadelphia 43, Pa.

### SCOTCH TAPE LOOSE LEAF BINDER

Loose leaf binder can be made from any folder with new scotch tape product called "Pik-Tab", according to Tape Products Co., 263 E. State St., Milwaukee, Wis. Binders made with the new tape are said to offer the following advantages: Holes do not have to be punched in the material to be filed; all pages lie perfectly flat regardless of where the binder is opened; any size sheet of any thickness can be used; sheets file in perfect alignment easily and are held securely. Samples available upon request.

# ADJUSTABLE VERTICAL DESK TOP FILE

A light weight, adjustable desk top file, called "Filo" is manufactured by the Weber Office Specialty Co., 1328 West 6th St., Los Angeles 14, Calif. The flexibility of the file assures a ready space for





anything from a single sheet of letter paper to an object as bulky as a large dictionary, according to the manufacturer. It adjusts at the touch of the fingers to any desired combination of spaces between plates, 1/16" to 6". The file is finished in everlasting golden brown hammertone, and extra plates are available.

(Please turn to page 308)

# "Make your typewriter do it!"

"Most typists had good instruction in school, but need reminding. And surprisingly few make enough use of machine features which actually save time and work." (signed) Norman Saksvig

"CORRECT POSTURE" posed by Norman Saksvig

says NORMAN SAKSVIG ...

Former speed champion and authority on correct technique tells you how to reduce fatigue and back and eye strain by simple methods already demonstrated to over 200,000 typists.

WHEN Mr. Saksvig appears before your employees, his objective is to demonstrate his technique rather than our machine.

Our aim is obvious. For if users of Smith-Corona Typewriters can learn to get *out* of these fine machines the many services we build *into* them, our sales problem becomes no problem at all!



Correct fingering means "hugging the keys"—fingers always on keyboard, pivoting from the guide keys as required.



More time and effort are lost this way than you imagine. Keep your hands down—and watch speed go up!



Wrists relaxed, and slanted about parallel to keyboard; fingers should be curved and resting lightly on the guide keys.



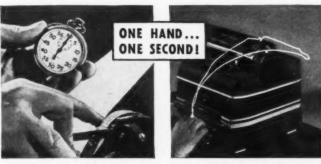
Wrists far too high, and fingers much too straight. This position produces excessive fatigue, and increases typing errors.



Start the carriage with a quick firm throw, drop lever before it's half way across, let momentum do the rest.



Don't *lean*, don't "follow through" as you return the carriage, don't hold hand on lever all the way across.



AUTOMATIC MARGIN SET...A SMITH-CORONA "EXCLUSIVE"

We photographed a light on Saksvig's finger, and timed him with a stop-watch. Hand leaves keyboard, finger sets right margin and left margin, then returns to keyboard. Time... one second! Figure that saving in a day's typing! SMITH-CORONA
OFFICE TYPEWRITERS

Makers also of famous Smith-Corona Portable Typewriters, Adding Machines, Vivid Duplicators and Typebar Brand Ribbons and Carbons.

L C SMITH & CORONA TYPEWRITERS INC SYRACUSE 1 N Y



# DEPENDABLE PERFORMANCE

You can place the same reliance in Sheppard products as the veteran hunter in his faithful dog and trusty gun. Past performance is still the best basis for future expectations.

Sheppard's developments in its first quarter century are dependable proof of performance. Sheppard was among the first and largest producers of "V" Mail, one of the first to make window type envelopes, pioneers in making lined and opacity envelopes, and designers of the famous Shepco Klasp.

The ingenuity and initiative displayed in these and many more developments are your assurance of continued higher quality Shepco envelopes. This is true of any price and size range, and all have the delicious mint Flavor-Seal flap. Write today for an interesting outline of Shepco products contained in Booklet No. 410.



### NEW ALUMINUM RACK CUTS GATHERING TIME

Illustration shows the TU Model gathering rack, manufactured by the Evans Specialty Company, Inc., 407 N. Munford St., Richmond 20, Va. It is made of aluminum and collapses when not in use.



Section Gathering Rack

Two sizes are available, 11 or 18 sections, each section holding 500 sheets. In assembling a small number of sheet sets they can be alternated in the sections, thereby putting four sets of a three-sheet assembly in a 12-section rack. DU Model can be operated from either a sitting or standing position, and in any number of units. Larger sheets can be collated from both models by putting a stiff cardboard behind the piles.

DRAFTING STOOL



Revolving, spring-filled, all metal seat covered in either genuine leather or leather-ette, features deluxe drafting stool being marketed by The Royal Metal Manufacturing Co., 175 North Michigan Avenue, Chicago, Ill. Also featured is an oversize housing and a heavy steel flange which support the steel screw stem, especially designed with small threads to prevent wobbliness and to add to the life of the stool. The stool has seamless steel tubular legs and is of all-welded construction. The seat height is adjustable from 22" to 28" or 27" to 33". Metal portions of the stool are finished in taupe oven baked enamel.

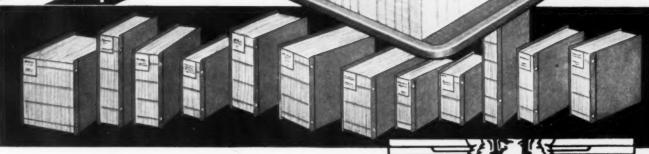
(Please turn to page 310)



IT'S NEW!

IT'S INEXPENSIVE!

FOR TRANSFER RECORD



# THE NEW NATIONAL PRESS-TO-LOCK TRANSFER BINDER

provides a new kind of low-cost transfer filing. Loose leaf records of all kinds are easily transferred to these sturdy utility covers and automatically locked in by finger pressure alone.

And they can either be locked for permanent storage or locked for temporary filing to be opened only with a master key. An entirely new 2-in-1 convenience!

And a wide variety of sizes for every type of record!

Ask your stationer for complete information . . . and the low cost of Press-to-Lock Transfer Binders . . . write us for circular No. PL-1.

More and more
loose-leaf records
everywhere are on "EYE-EASE"
paper . . . . . .
exclusively
NATIONAL!

# NATIONAL BLANK BOOK COMPANY

HOLYOKE, MASSACHUSETTS
NEW YORK CHICAGO BOSTON

SAN FRANCISCO

ble orupe

at

or

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an

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to

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n-nc



# How to be Popular with Secretaries

Little things can make a big difference to a secretary. Take carbon paper, for example. The patented features of Webster's Micrometric make it unlike all others—and she'll love it. Its numbered scale along the edge takes the guesswork out of spacing a letter or report. And she can remove Webster's Micrometric Carbon Paper cleanly, without touching the carbon surface. It saves a lot of time and trouble.

Micrometric costs no more than other high-quality carbon papers.

You'll get immediate delivery of Micrometric Carbon Paper—and the complete line of Webster products—from factory warehouses located from coast to coast, or from 1500 Webster dealers. This is a good thing to remember the next time you order carbon papers or typewriter ribbons; duplicating carbon papers and accessories; carbon paper ribbons for photo-offset work; ribbons and carbons for Elliott-Fisher, Addressing, Adding, and International Business Machines. Consult your nearest dealer, or write to F. S. Webster Co., 7 Amherst Street, Cambridge 42, Mass.

Better buy...

# **WEBSTER'S**

Micrometric Carbon Papers and Typewriter Ribbons

### EDIPHONE MARKETS SECRETARIAL SPEAKER

A new Ediphone secretarial speaker has been introduced by Thomas A. Edison, Inc., for secretaries who transcribe dictating machine cylinders. A horn which attaches to the reproducing unit amplifies the sound to the point where the recording can be clearly heard two or more feet away. A volume control knob allows the sound to be adjusted. The speaker is readily positioned vertically or horizontally.



Ediphone's amplifying horn

It is not necessary to remove the conventional Comfortube headpiece from the unit to use the speaker, as the mounting provides for both. A turn of the control knob switches the sound from the speaker to the earphones. The speaker is designed for use with electronic recordings or loud acoustical recordings. Further information may be obtained from Thomas A. Edison, Inc., Ediphone Division, Lakeside Ave., Camden, N.J.

ALL METAL CONTACT PRINTER WITH AUTOMATIC TIMER



Viseco Photo Reproducer

The Viseco Photo Reproducer is a product of the Victor Safe & Equipment Co., Inc., North Tonawanda, N. Y. It is an all metal contact printer with an automatic timer, and is built for everyday use and long wear. Its dimensions are: 18" long, 7½" high, 12" deep. It weighs 17½ lbs.

The printing surface measures  $10'' \times 15^{1}/2''$  and it will make good copies of anything typed, written, printed or drawn up to size  $9\frac{1}{2} \times 15''$ . Viseco sensitized papers, chemicals and accessories are available.

(Please turn to page 312)

# Our Mark of pride...your mark of satisfaction

The American potters of the early Nineteenth Century made known their pride in their ware (much of it now collectors' items) and their responsibility for its quality by marking it either with name or initials.

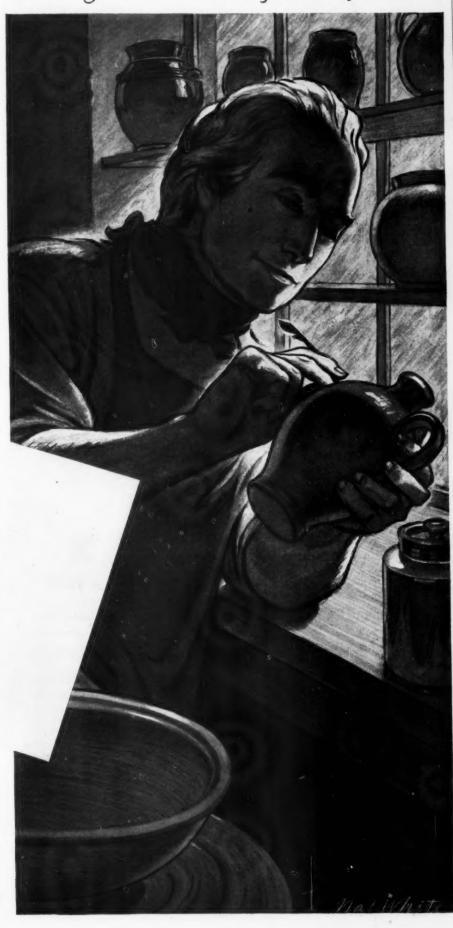
Since early in the Nineteenth Century we have been making fine papers from cotton and linen fibres only-the most enduring materials from which paper can be made-and water-marking each sheet with the name of Crane. It is the mark of our pride; your mark of assurance, and one to be found by holding the sheet of paper against the light. When next you buy paper, we suggest you look for the mark of Crane and enjoy the pleasure and satisfaction of using Crane's for all your personal and business correspondence and your social needs and forms.

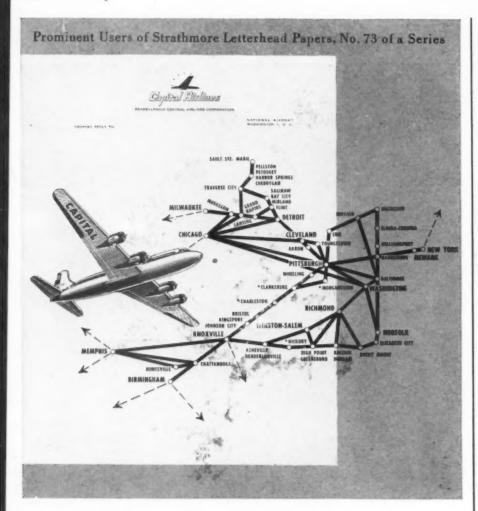
# Cranes



# CRANE'S FINE PAPERS

MADE IN DALTON, MASSACHUSETTS
SINCE 1801





Are you founding a

# REPUTATION

in a new field?

Twenty years ago, Capital Airlines (formerly PCA) pioneered a history-making flight of 127 miles with one sack of mail from Pittsburgh to Cleveland. That seat-of-the-pants flight established the first route of an air-carrier that now flies 100,000 passengers a month over a 4,000-mile network with clockwork precision.

Dependable air transportation was the keynote of the young company from the first. To express that quality to the traveling public, they chose a Strathmore Letterhead Paper and maintain it to this day. Such first impressions are important. If you, too, are founding a reputation for your firm, begin at once with a Strathmore letterhead that silently says, "We're in business to stay!"

Strathmore Letterhead Papers: Strathmore Parchment, Strathmore Script, Thistlemark Bond, Alexandra Brilliant, Bay Path Bond, Strathmore Bond.

# STRATHMORE OF FINE PAPERS

Strathmore Paper Company, West Springfield, Massachusetts

# BUSINESS MACHINE STANDS USE LITTLE FLOOR SPACE



Illustration shows one of a line of business machine stands manufactured by the Mark Van Riper Company. Flat Rock, Mich. The manufacturer asserts that the tubular steel, all-welded joint assembly makes a rigid chassis. Heavy hardwood tops and skid-proof feet are other features. Four models are offered in the line, including flat tops, a stand with recessed center section and elevated work surfaces, and a special model for continuous forms writing machine.

Amount of floor space necessary for the operator is said to be only 9½ sq. ft.

# ROYAL PORTABLE APPOINTS DISTRICT REPRESENTATIVES

The portable division, Royal Type-writer Company, has announced the appointment of George Witzell, John Hokenson and William Van Ittersum to field posts. Mr. Witzell has been assigned to Cleveland, to work the eastern half of Ohio, western New York, and north-western Pennsylvania. Mr. Hokenson will have headquarters at Minneapolis, Minn. and travel through Minnesota, Iowa, North and South Dakota, and part of Wisconsin. Mr. Van Itterson will use Detroit as a headquarters and will cover Michigan and portions of northern Indiana and Ohio.

Frederick Korwan, former New York branch Roytype manager has been promoted to New York district Roytype manager. He will assume full jurisdiction over sales in New York, Albany and Brooklyn.

# ELECTRIC LIQUID DUPLICATOR



A new electric Copy-rite liquid duplicator is announced by Wolber Duplicator & Supply Co., 1202 Cortlandt St., Chicago 14, Ill. A new feature includes an automatic master sheet lock and release, the sheet being locked in place automatically

(Please turn to page 314)



OFFICE FORMS

SOLD STAN STAN ONO DYMS ON

lead pencils

colored pencils

Typewriting

NESS MACHINES

arbon Copies

ink m

LETTERHEADS





MINUTES SAVED...RE-COPYING SAVED...FORMS SAVED

r-mated Eras with Vean Co

OFFICE FORMS

Lubkleen

VAN DYKE 6000

CUSY 212 or 112

VAN DYKE 6500 or 6505

VAN DYKE SSOO or SSO7-brook

VAN DYKE 6580 or 6587-bresh

Your office functions on paper-paper that varies as to quality and surface strength. Messy erasures and torn paper surfaces cost you money.

Solution? Specify erasers that are mated to the kinds of paper you use — that have been laboratory-tested on those papers to give faster, surer, cleaner AN JAN S PRINT corrections - for pencil, ink, typewriter or office machine.

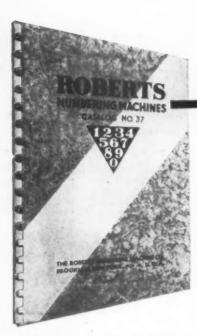
Mail coupon now for your FREE "ERASER-SELECTOR-WHEEL"

... automatically and accurately picks the proper Paper-Mated Eraser for every business need.

EBERHARD FABER PENCIL CO. Dept. P-10, 37 Greenpoint Ave., Brooklyn 22, N.Y.

Gentlemen: Please send me, without charge, your "ERASER-SELECTOR-WHEEL"

NAME. COMPANY ADDRESS CITY\_ STATE DEALER'S NAME

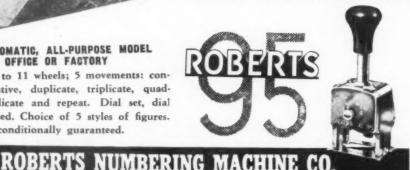


# Here are the answers to

# your numbering problems

No matter what your problem is, you'll find the answer to it in the Roberts Catalog of Numbering Machines. There's a Roberts machine for every office or factory use - hand and typographic machines, machines for stamping and embossing on metal. Consult us on any problem of design.

SEND FOR YOUR CATALOG—NOW!



BROOKLYN 8, NEW YORK

# AUTOMATIC, ALL-PURPOSE MODEL FOR OFFICE OR FACTORY

Up to 11 wheels; 5 movements: consecutive, duplicate, triplicate, quadruplicate and repeat. Dial set, dial locked. Choice of 5 styles of figures. Unconditionally guaranteed.

Redifixt 1947

Withholding Tax Forms

Best of all for YOU! Federal, State and Social Security all in one swift operation. Send for sample on pink paper . . .

# F-7 DIAL TAX FINDER

SS1B Federal Forms Employees W-4 Forms on Card Kraft W-2 Window Envelopes

We also manufacture all types of continuous and REDIFIXT time carbon forms, on the latest post war Rotary Equipment.

WRITE FOR DETAILS ON YOUR LETTERHEAD

CONSOLIDATED

Business Systems, Inc.

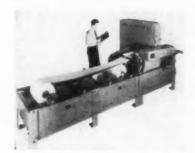
Dept. 006 30 Vesey St., New York City 7



(Continued from page 312)

when placed in drum, and when the drum stops it is automatically released for easy removal. Another feature permits the loading of a full ream of copy paper from the side without removing the paper feed. Motor is concealed and employs a worm gear drive. A hand-operated duplicator is also available.

# 1 1 1 ROLL STOCK COLLATING MACHINE



This machine was developed by the Vertex Company, 40 West 4th Street, New York, N. Y. for producing manifold sets. The machine takes paper, foil, plastics, tissue or other webs from rolls, and collates perforates, strip-glues, inserts tissue-sheets, turns and glues-down the edge, imprints interchangeable message, cuts to selected width over wide range. counts and drops complete units into shipping container. Machine will also handle sensitive material, such as coated carbon paper. It occupies floor space of 17' x 8" weighs approximately 2000 lbs., and will produce up to 70 complete units per min-

## 1 1 1 "ICELESS" REFRIGERATION **UNIT FOR OFFICES**



Combination liquor cabinet and bar for office use, manufactured by S. Nemes, 2631 Lehmann Court, Chicago 14, Ill., features a built-in "iceless" refrigeration unit. The refrigerator has an 8- cu. ft. capacity, two single ice-cube trays and one large ice-cube tray 105/8" by 71/2' by 12" deep. The over all cabinet dimensions are 26" deep, 36" wide, 42" high. The unit, unconditionally guaranteed for one year, requires no oiling. The top section is lined with stainless steel, and provides room for edibles and refreshments. Exteriors are made of genuine walnut and walnut veneer, oak and oak veneer, or mahogany and mahogany

(Please turn to page 316)



... and it loads quicker, works slicker . . . because of its Open Channel!

Chromium body protects the channel against grit and dust to insure clog-free performance. Super-hardened steel, precision engineered to last a lifetime!

Load a Swingline stapler with 100% round wire Swingline staples, and you have the speediest, most efficient stapling

nd 2" li-

eel, reenand any team for office, factory, school or home.

round wire, pre-tested to insure rapid-fire penetration and clog-free action in any standard stapler. Look for the red, white and blue box at your stationer's.

Swingline STAPLES STAPLERS





YOUR STATIONERY is background for your sales story. Make sure that story gets the background it deserves. See your printer-he's an expert. Tell him what special use you plan for your stationery . . . If you're searching for a paper of distinction for a story of importance it's more than likely your printer will recommend -



Rising Line Marque

√ exclusive pattern inspired by Italian Handmade paper √ envelopes in 6 sizes

V excellent printing surface for die-stamping, lithography, gravure or letterpress When you want to KNOW . . . go to an expert! √ 2 weights

Ask your printer . . . he KNOWS paper!

Rising Paper Company, Housatonic, Mass.



√ 25% rag

This new post-war "Pendaflexer" brings you double filing convenience – a handsome, sturdy steel filing cabinet on wheels, plus hanging Pendaflex\* folders.

Roll the "Pendaflexer" anywhere you hand it that's convenience number and

need it - that's convenience number one. Then file and find papers instantly in modern hanging Pendaflex\* folders-that's convenience number two!

It's a combination that will break every filing and finding speed record wherever used. Get your "Pendaflexer" now-imme-Reg. U.S. PAT. OFF \*

OXFORD	FILING	SUPPLY	COMPANY,	INC.

3210 Morgan Avenue, Brooklyn 6, N. Y. Send Coupon for Illustrated Price List

# THE MODERN PLASTIC TYPE CLEANER THAT PRESERVES THE LIFE OF YOUR BUSINESS MACHINES



# USED BY BUSINESS FIRMS THROUGHOUT THE WORLD!

International Business Machines Metropolitan Life Insurance Co. Prudential Life Insurance Co. Eastman Kodak Co. Western Electric Cheney Silks Texas Oil Co.

AT YOUR STATIONERS . . . Or WRITE . . .

## OFFICE MACHINE FOR POSTCARD DUPLICATING



Duplicard, is the name of small office unit made of plastic, made by the Rutherford Duplicator Co., Houston, Texas, for postcard duplicating. Messages may be handwritten or typewritten, and production speed of the machine is placed at 1000 cards per hour. Gravity feed and full floating printing assembly is said to make accurate and uniform printing of forms up to 31/4" x 51/2" practically automatic. The Duplicard may be used for printing post cards, price lists, shipping tags, package labels, route cards, etc.

### PENCIL CARBON

Kant-Stik is the name of a brilliant writing, long wearing pencil carbon announced by the Codo Manufacturing Corp., Coraopolis, Penna., manufacturers of inked ribbons, carbon papers, and hectograph supplies.

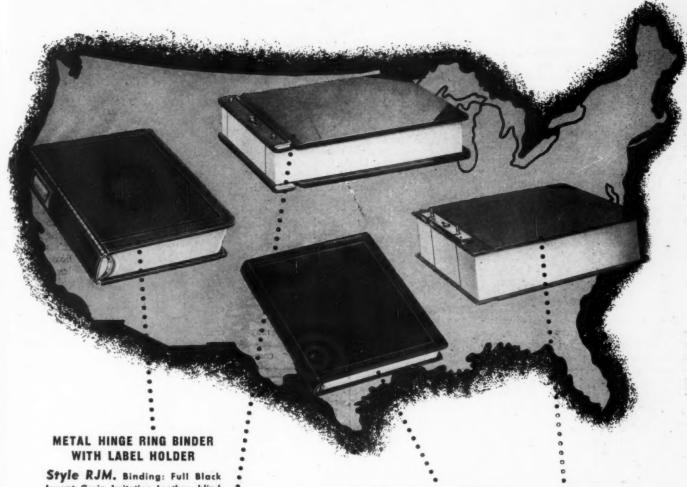
# TYPIST'S WORK HOLDER



Illustration shows typist's work holder announced by the Barton Engineering Co., Stephenson Bldg., Detroit 2, Mich. The work holder fits any standard type-writer—the weight of the typewriter holding it in place, and copy is held at eye level. The unit is constructed of heavy gauge steel finished in smooth black enamel.

(Please turn to page 318)

# North, South, East or West, Federbush Binders are the Best!



Style RJM. Binding: Full Black Levant Grain Imitation Leather, blind tooled; stiff covers; metal parts highly nickel plated with triggers.

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ack

### SECTIONAL POST BINDER

Toplock — Style FR. Binding: Finest Grade Blue Slate Canvas, Red Leather Corners; medium weight binder board with rounded corners; end caps of highly nickel plated steel.

### FABRIC HINGE RING BINDER

Style RJ. Binding: Black Imitation Leather, blind tooled; stiff covers; metal parts highly nickel plated with triggers.

# SECTIONAL POST BINDER

Slotlock — Style SB. Binding: Blue Slate Canvas, Black Imitation Leather Corners; medium weight binder board with rounded corners; canvas hinge; slotted locks.

# The FEDERBUSH Company Inc.

91 SEVENTH AVENUE . NEW YORK 11, N. Y.

When It Comes to Binders - Come to Binder Headquarters . . . or Write for Our Complete Catalog.

## ADJUSTABLE DRAFTING DESK



Illustration shows all-steel adjustable drafting desk being offered by the Haskell Manufacturing Co., 206 Penn Ave., Pittsburgh 21, Pa. The desks are finished in metallic gray with desk top linoleum, and are available in several sizes offering a large drawing surface up to 60 inches. The tilt-top feature facilitates convenient working angles up to 20 degrees. Height also is adjustable—from 29 to 38 inches. Desks contain ample storage space for art supplies, drawing paper, and reference materials. Printed matter available.

BEGIN LONG-RANGE RESEARCH ON WATERPROOFED PAPERS

1 1 1

A comprehensive investigation of waterproofed papers—used for such purposes as packaging, curing of concrete, and moisture barriers in buildings—is being undertaken at the National Bureau of Standards through a fellowship of the Waterproof Paper Manufacturers Association. A long-range research program, extending over at least three years, has been jointly agreed upon. The services of Robert C. Reichel as research associate are being provided by the association, with laboratory facilities and technical assistance furnished by the Bureau. The papers to be studied comprise a wide variety of types of high-strength papers having high resistance to permeation by water and water vapor obtained by use of asphalt and other resistant materials.

Mr. Reichel, a graduate of the University of Illinois, was formerly research associate at the Bureau for the Insulation Board Institute. More recently he has been architectural field representative for the Portland Cement Association, following war service in the Navy's Civil Engineer Corps. He is a member of the American Society of Civil Engineers and the Society of American Military Engineers.

The project for immediate investigation at the Bureau is the development of a suitable accelerated aging test for predicting permanence of the papers. This phase of the work will include new or improved tests for measuring changes in properties of the papers when exposed to deteriorating influences. The aging treatment will consist of exposure to cycles of extreme moisture and temperature conditions to which the papers may be subjected in use. The methods for determining extent of deterioration com-

prise tests for changes in strength, dimensions, and permeability to water and water vapor, and for ply separation. Other projects will include relation of properties of waterproofing asphalts to performance of the papers, means of reducing the flammability of the papers, and odor and taste problems involved in food packaging.

Y Y Y
VIBRATION MOUNTING FOR
BUSINESS MACHINES



Vibration mountings for business machines, designed to prevent vibration being transmitted to floors and walls are being marketed by Jardin Associates, Inc., 75 Maiden Lane, New York, N. Y. The mounts are tradestyled Sountrol. It is estimated that they absorb 90 to 96% of machine vibration. Employing the principle of "rubber in shear" each mount consists of a small channel floating in rubber between two steel angles riveted to a steel base plate. Drilled and tapped, as required for the various type machines or furnished with a cup to receive the machine foot, the mounts are quickly and easily installed. They are also available for machines on which castor mounting is preferred.

# NO PUNCHING NECESSARY WITH File-Rite CATALOG RACK



It is easy to keep catalogs, price lists and other sales or reference material up-to-date with the File-Rite catalog rack. No punching necessary. Material inserted or removed in a second. Widely used in many industries. Available in three sizes: 12", 24" and 32" capacities.

Ask your stationery store or write

# **NEWMAC COMPANY**

423 TENTH STREET
SAN FRANCISCO • CALIF.

CATALOGS
MANUALS
PRICE LISTS
LOOSE SHEETS
TELEPHONE BOOKS
INDEX PAGES
INSTRUCTION BOOKS
Any printed material up
to 111/2" high.

\*\*
Reduces racking and
reference time.

\*\*
Makes it easier to keep
material up to date.

\*\*

Three or four-hold sections available for loose sheets.

Sections and bound material securely held in rack with flexible steel rods.

# HAND, FOOT, POWER OPERATED

# STAPLING MACHINES

60 MODELS for INDUSTRIAL & OFFICE USE

Precision Stapling Machines are made of fine quality materials to withstand long, hard usage.

MODEL F. P. S.
Foot or Power Operated
SPEED & STRENGTH

Capable of stitching bottoms of corrugated and fibre cartons up to 200 per hour.

OTHER USES

ITEMS on Cards—TELESCOPIC Carton Toy Manufacturing; Hardware boxes — Book Binding — Numerous Production Line Jobs.

The UNIVERSAL HAMMER TACKER

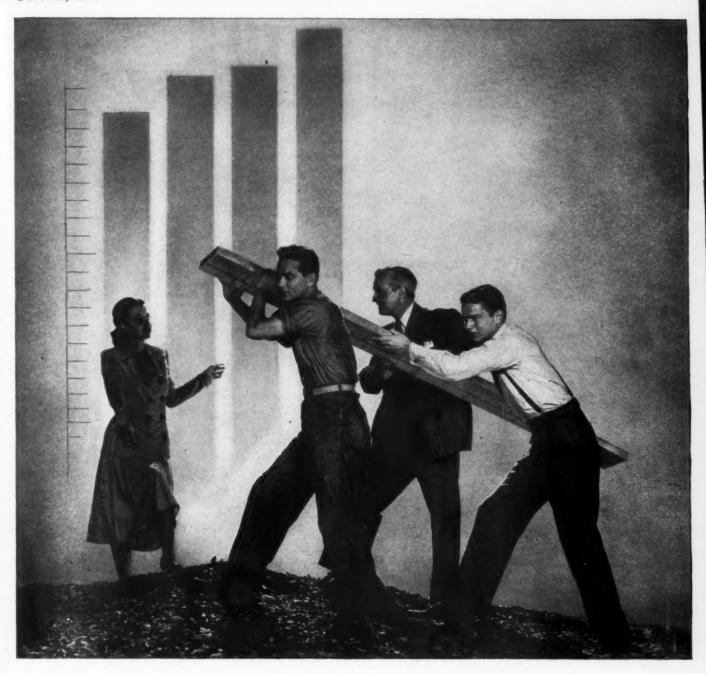
Lightweight Compact Simple



Drives a Staple in one blow thru wood, fibre, cloth, etc. Ideal for Bulletin Board Notices, Display work, tagging cases, crates, etc. If you have a special stapling, fastening or tacking problem, our Engineering Dept. will be pleased to work with you. Write for Literature.

# PRECISION STAPLE CORPORATION

Manufacturers of PRECISION BUILT Stapling Machines & Staples
239 Fourth Avenue New York 3, N. Y.



# APPLYING EVERY YARDSTICK

The use of all available yardsticks to anticipate paper requirements has long been a practice of ours. For it takes long-range planning to meet the present and future needs of those who use paper and those who sell it.

Planning is especially important in an industry where so many steps must be taken between the time trees are felled and the finished paper reaches the customer's hands. Woodsmen must work far in advance, millmen must have time to schedule paper machines: salesmen and distributors must concern themselves with everything that helps toward smoother delivery of the required paper products.

A big job, this—and because it's bigger than ever before, far-reaching planning which gauges the customer's requirements is more important than ever before. International Paper Company, 220 East 42nd Street, New York 17, N. Y.



# PERSONALITIES in the NEWS

Rolph D. Au has been appointed manager of the Rubber Purchasing Department of The B. F. Goodrich Company, according to an announcement by E. A. Stevens, Director of Purchases.

Mr. Au has been with the company since 1933 after receiving a science degree from Wooster College, Wooster, O. He spent several years in the chemical laboratories and raw materials division in Akron before being sent to New York in 1938 to open the New York office of crude rubber inspection. In 1942 he was loaned to the Rubber Reserve Company as assistant chief inspector of crude rubber. He again headed the Goodrich New York office of rubber inspection from 1943 until his recent appointment.

Harry T. Topping, a buyer of printing and stationery in the purchasing department of the Standard Oil Company of New Jersey recently received a forty-year service button from M. J. Rathbone, president of the company, in Mr. Rathbone's office in New York.

Mr. Topping has been in the purchasing department without interruption since he first went to work there in September, 1907. Before World War I Mr. Topping was a member of the New York National Guard and between that war and World War II of the New Jersey National Guard.

Samuel Blake, formerly associated with the purchasing department at Bridgeport Brass Company, Bridgeport, Conn., has joined the Sprague Electrical Supply Company of Bridgeport as a salesman.

During his five years at Bridgeport Brass he was secretary of the salesmen's and purchasing agents' group, taught a purchasing course at Junior College, and was president of the Brass Tacks Club.

Charles J. Gimbrone has resigned as purchasing director of Buffalo, N. Y. to accept the post of Deputy Commissioner of Purchase and Standards for the State of New York. He was a member of the State Assembly from 1928 to 1933 and was deputy purchasing agent for Erie County from 1937 to 1945.

Succeeding Mr. Gimbrone is Anthony Panosci, former Niagara District councilman. Mr. Panasci resigned his councilmanic position as of September 15.

G. N. Deoton is the purchasing agent at the Ford Motor Company's new \$900,-000 sales distribution and parts branch building in Houston, Tex. Mr. Deaton has been with the company for 25 years, five of which have been spent in purchasing.

Edward M. Krech has joined the J. M. Huber Corporation as director of purchases according to an announcement by H. W. Huber, president. He was formerly with the Singer Manufacturing Company in the sales and purchasing depart-



Edward M. Krech

ments. Mr. Krech will coordinate all purchases for the ink, industrial products, clay and oil, and gas divisions, from the company's headquarters in Brooklyn, N. Y. He is a graduate civil engineer from Cornell University.

Walter D. Roston has joined Venus Foundation Garments Inc. as director of the purchasing department, with headquarters in Chicago, Ill.

Fred C. Luft, textile division, Dominion Rubber Ltd., Kitchener, Can., has been appointed purchasing agent of that division.

Also E. Toylor has been appointed general purchasing agent of M. T. Stevens & Sons Co., North Andover, Mass. He has been associated with the company and its predecessor, Hockanum Mills Co., for the past 14 years.

J. Edward Hudson has been appointed purchasing-stores representative for the Atlanta Marketing Division of Shell Oil Company, Inc. In his new position, he will be responsible for the purchasing and warehousing of marketing materials and equipment for the southeastern states. Mr. Hudson has been associated with the company for the past six years.

C. B. Honover has been named purchasing agent for the Milwaukee Road, of the Chicago, Milwaukee & St. Paul R. R., with headquarters in Chicago. With the railroad since 1919, he became assistant purchasing agent in 1946. B. B. Meigard has been appointed assistant to chief purchasing officer, and R. M. Rodicke assistant purchasing agent.

Lorion W. Willey has been appointed purchasing agent for the Westinghouse Electric Corporation's Industrial Electronics and X-Ray Divisions in Baltimore, Md.

Mr. Willey joined the Baltimore Division of Westinghouse five years ago as expediter in the purchasing department. After various assignments in the department, he was appointed staff assistant in 1944, the position he relinquished to accept his new assignment.

A native of Baltimore, Mr. Willey studied law at the University of Maryland and business administration at Johns Hopkins University. Prior to joining Westinghouse, he was employed by the Consolidated Gas & Electric Company of Baltimore as supervisor in charge of outside sales.

John Robert Wolsh has been named director of purchases at the White Sewing Machine Corp., Cleveland, O. He was formerly purchasing agent with Cleveland Tractor and during 1945-46 was director of purchases for the Oliver Corp., with headquartes in Chicago. Louis Zokrojsek, who has been purchasing agent for the company for many years, retains the same title.

Gene Wolker has been promoted from chief clerk of the purchasing department to purchasing agent for United Gas Corp., Houston, Tex. He replaces A. T. Johnson, Jr., who has been transferred to Mississippi as sales manager.

Leo J. McPhorlin has been appointed assistant director of purchases for the Briggs Manufacturing Co., Detroit, Mich. (Please turn to page 322)



Glassine is a very special paper, transparent as glass, widely used for packaging and for windows in mailing envelopes. Its smooth, high finish is produced by being run through large, high-pressure supercalender rolls, mounted in heavy-duty bearings.

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In an Eastern paper mill, the bearings of such supercalender rolls were burning out at the rate of five per month. None of the lubricants recommended and supplied by another oil company was able to lick the problem. Then a Sun engineer was asked to study the situation. After a complete investigation, he recommended the correct grade of one of Sun's "Job Proved" industrial oils.

With this oil in the system, maintenance costs dropped \$3,000 in 22 months. Production schedules are no longer interrupted by frequent bearing failures. On the strength of this "Job Proved" performance, the paper mill plans to use this Sun Oil in two new supercalenders soon to be installed, and said to be among the world's largest.

Sun industrial products are solving difficult problems like this in plants of all kinds. To increase the output of your plant, it may pay you to find out about Sun's full line of petroleum products . . . including lubricants, cutting oils, processing agents, microcrystalline waxes and solvents. Call your nearest Sun office, or write Department PU-10.

COMPANY Philadelphia

In Canada: Sun Oil Company, Ltd.—Terento and Montreal

SUN "JOB PROVED" INDUSTRIAL PRODUCTS ZSUNOCOS



(Continued from page 320)
He has been with the company for 25

years and has bought steel for a number of years.

Albert J. Kuhn, purchasing agent for the Huenfeld Co., Cincinnati, O., is now vice-president in charge of purchasing.

Appointment of Frank Cuccia as Director of Procurement, reporting to G. T. Willey, vice president-manufacturing, has been announced by Harry T. Rowland, executive vice president of The Glenn L. Martin Company.



Frank Cuccia

Mr. Cuccia, who has been Assistant Director of Procurement since last year, took over his new duties on August 15th.

Prior to joining the Martin Company in 1946, Mr. Cuccia had been stationed at the Martin plant for three years as a civilian employee of the Army Air Forces in the capacity of plant clearance officer with responsibility for the disposition of all surplus and terminated materials.

Mr. Cuccia is a veteran of both World Wars and it was upon his discharge from the Marine Corps in 1943, after service in Panama, that he was sent to the Martin Company as a representative of the AAF.

- t. H. Rolston has been made division purchasing department representative at Houston, Tex., for the Sohio Petroleum Co. He has been with the company for three years and was formerly in the purchasing department at Oklahoma City, Okla.
- H. F. Miller, head of the crude oil purchasing department of the Carter Oil Co., Tulsa, Okla., has been made a vice-president of the company. He has been with the company and other Standard Oil Co. of New Jersey affiliates for the past 45 years and has been a Carter director since 1933.

Julius Goldmon has been named purchasing agent and office manager of the Berkshire Color & Chemical Corp., Springfield, Mass.

G. Roy Wolton, formerly assistant purchasing agent, Zenith Carburetor Division, Detroit Mich., is now advertising manager for that company. He has been with the company for the past 11 years, six of which were in the material control department and the rest as assistant purchasing agent.

J. D. Heinz has been named purchasing agent for the James Vernor Co., Detroit, Mich., succeeding Fred Unger, who has been named director of franchises.

E. H. Brooks, Director of Purchases, Goodyear Tire & Rubber Company, Akron, Ohio, announces re-organization of the purchasing department, involving the creation of three new division manager posts, as follows:

Rollin Chittenden and Morc W. Loibe have been assigned to two of the division managerships, and L. A. Murphy, who has been purchasing agent at Goodyear Aircraft Corp. in Akron for six years, is the third division manager. H. A. Deloney, of the tire company's purchasing department staff, has been transferred to aircraft as purchasing agent.

Mr. Chittenden, a graduate of the University of Denver, has been with the company since 1920. Mr. Laibe and Mr. Murphy both joined the company in 1925, following their graduation from Ohio State University. Mr. Delaney, who attended Bethel College, has been with Goodyear since 1917.

All purchasing functions for the Ward Products Corp., Cleveland, O., and Mercury Equipment Division, Ashtabula, O., are now being performed by the Gabriel Company purchasing office, 14500 Darley Ave., Cleveland, O. The two firms were purchased by the Gabriel Company last year. Howord F. Guerin, purchasing agent, is in charge of the office, assisted by Eugene R. Kelley, assistant purchasing agent.

H. A. Wiedman has joined Polak & Schwartz, Inc., New York, N. Y., dealers in essential oils, aromatic chemicals and similar commodities, as purchasing agent.

Arthur M. Angove has succeeded Ben R. Nichols as City Purchasing Agent for Tacoma, Wash. Mr. Nichols retired on September 1 after twenty years' service with the city. Mr. Angove was formerly chief clerk of the board of contracts and awards.

Edward E. Michaelson has been appointed purchasing agent at the Atlantic Wire Co., Branford, Conn.

Chorles M. Cochron has been appointed business manager and purchasing agent at Franklin College, Franklin, Ind.

Joy Gage, former buyer for Birch-Johnson-Lytle, Seattle, Wash., has been named assistant to the general purchasing agent, T. L. Bragaw.

### KARL F. TIEGEL

Karl F. Tiegel, vice-president, director of purchasing and a member of the board of directors of the Pittsburgh Piping and Equipment Co., died in Pittsburgh on August 19 after a long illness.

Mr. Tiegel, who had been associated with the company since 1910 as purchasing agent, was one of the original ten members of the Purchasing Agents of

Pittsburgn. He was also president of the Hempfield Foundry Co. and of the Piping Supply Co.

### HENRI A. BALES

Henri A. Bales, deputy purchasing officer of the District of Columbia, died on September 8. Mr. Bales entered the District Government in the Purchasing Department in 1919. He served many years as food buyer for the District hospitals and institutions and later as Chief of Priorities during the early part of World War II.

# AMONG THE COMPANIES YOU BUY FROM

Detroit, Mich.—Lamson & Sessions Co. Victor Samson has been appointed manager of the company's office here, replacing Harry de Lapotterie, retired. Mr. Samson has been associated with the company since 1923, and has spent most of that time as a representative of the company in the Detroit area.

Toledo, O. — The Rapids-Standard Co., Inc. Jerold Van Alsburg has been designated an Ohio sales representative for the company, with offices at 663 Spitzer Building.

Dayton, O.—Sheffield Corporation. Richard Y. Moss has been appointed sales manager of the machine tool division and



Richard Y. Moss

for the Measuray, or x-ray gage, for non-contact measurement of continuous production of such materials as steel, copper, brass etc., with J. T. Welch as his assistant.

Chicago, III.—Thermoid Company. Phil "Red" Shafer, former driver, owner, and builder of racing cars, has been named as fleet sales and service engineer for the company. He will have charge of fleet engineering and service work in the midwest area.

Buffolo, N. Y.—Wilsolite Corp., distributors of Goodyear rubber printing products and industrial mechanical goods. E. W. Sanders, formerly sales manager of Goodyear Tire & Rubber Company's rubber-to-metal products, has resigned to become vice-president and sales manager of Wilsolite.

(Please turn to page 330)

NO MORE COMPROMISING WITH Substitute BUFFS

you can out have have

Jackson

SAVE

SAVE 50%

ON YOUR COTTON BUFF WHEEL COSTS!

JACKSON BUFF CORPORATION 21-03 41st Ave. • L. I. C. N. Y.

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JACKSON BUFF CORPORATION 21-03 FORTY-FIRST AVENUE LONG ISLAND CITY 1. N. Y.

# an open letter to buff buyers—

To the Consumer of Cotton Buffs:

Are you analyzing what is your cotton buff cost per unit of production?

You want the buff that will wear longest, and finish the greatest number of parts for your dollar.

Jackson Airway Ventilated Buffs are engineered and designed to best meet specific buffing operations in your plant. The specification recommended for each job will give you the lowest cost and most efficient operation. It's not enough "just to buy a cotton buff." We offer you a product that gives you real economy.

Our facilities are at your call. Proof of our claim of 50% saving can be made in your plant, just as has been done in the plants of large numbers engaged in your line of business.

May we be given the opportunity to serve you?

Yours very truly.

JACKSON BUFF CORPORATION

L. W. MAC FARLAND

President

P.S. We are exhibiting in conjunction with one of the outstanding automatic polishing machines companies at the National Metal Exposition, Chicago, Booth 1928, between October 18th and 24th.

OUR STATEMENTS ARE Jacks—
not Myths! OUR VOLUME OF
BUSINESS IS EVIDENCE SUSTAINING
THE Jacks!

Jackson Wentilated

Jackson Wentilated

BUFFS

improved and perfected

do better work faster

wear twice as long

WILL SAVE

YOU

WILL SAVE

YOU

ARWAY Ventilated

Are constructed in many

different types for all

LOW COST

PRODUCTION!



Jackson Ventilated BUFFS

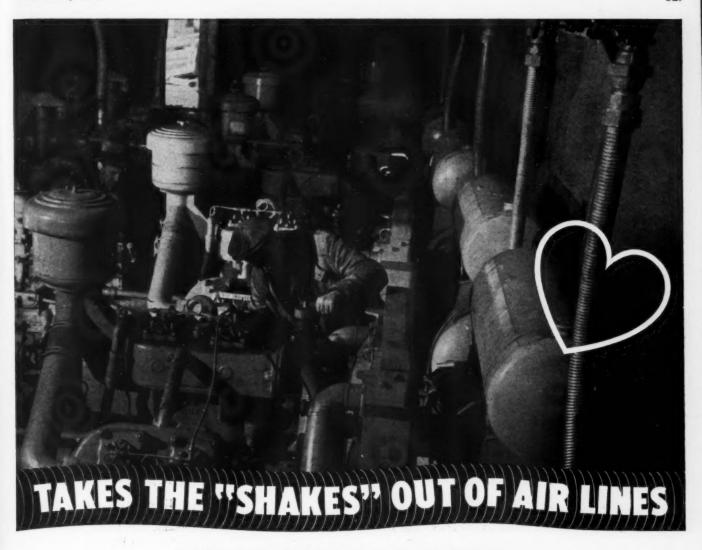
- Raveling eliminated, requires no raking
- Eliminates burning Saves compound
- Faster cutting, and does not ridge work

Jackson Buff WARNING NOTICE
York, has rights to U S. Patents Nos. 12.140.208 which have S. Patents Nos. 18. 19.189 through the sides means claims covering and protect all rights and stop intringement.

21-03

21-03 41st Ave., Long Island City 1, N. Y.

Jackson Went BUFFS
Alrways have always and always
will-



Penflex Flexible Metallic Hose prevents vibrations on compressed air lines, easily...safely...economically

With a mighty roar, 15 diesel-powered air compressors pump a steady air supply for air tools and equipment used on a world-known project. During the installation of these powerful compressor units, a method was required to prevent constant vibration from being transmitted to the rigid air lines.

That's where Penflex "Flexineering" service paid off. By using 3" Penflex interlocked flexible metal hose as connectors between compressors and pipe lines, the "shakes" are eliminated. Tight as a pipe, but flexible, Penflex hose "soaks up" constant vibration, assuring smooth air power... leak-proof, low-cost service. Penflex hose is also used to carry off

obnoxious diesel exhaust, preventing dangerous leaks and vibration.

When your plant is troubled with flexible tubing problems, whether they pertain to production, maintenance or high operating costs, let Penflex "Flexineering" find the right answer. As America's oldest manufacturer of flexible hose, Penflex offers helpful layout-design service on flexible tubing applications to all industries. For flexible metallic hose, tubing, or couplings from ½" I.D. and up . . . for handy, timesaving automatic barrel fillers and pneumatic rivet passers . . . for the finest in engineering service, call on Penflex. Write today, to . . .

### PENFLEX SALES COMPANY

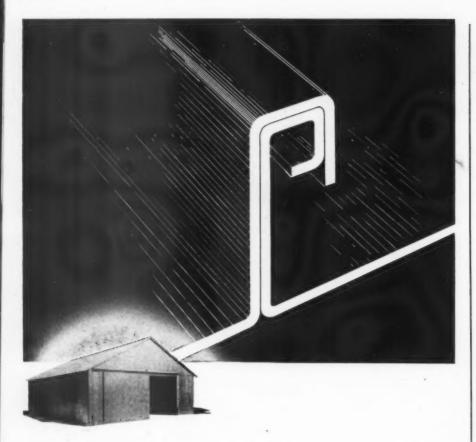
Division of

PENNSYLVANIA FLEXIBLE METALLIC TUBING COMPANY

7218 Powers Lane
Philadelphia 42, Pa.

BKANCH SALES OFFICES—BOSTON • NEW YORK • SYRACUSE • CLEVELAND • CHICAGO • HOUSTON • LOS ANGELES

enflex... HEART OF INDUSTRY'S LIFE LINES



### This Building Is "Stiff In The Joints"

It is not a sign of old age because the Armco-developed STEELOX joint keeps these standard buildings trim and youthful.

With the revolutionary STEELOX method, the jointed panels provide both structural support and finished surface. For sidewalls they save framing and outside covering. On the roof, STEELOX panels replace rafters, sheathing and roofing. Assembly is simplified, appearance improved and tight construction is assured. The patented joint withstands expansion, contraction and unequal settlement. It remains weathertight even under severe conditions. Unskilled workmen quickly join the panels into a neat, sturdy structure.

There are other advantages in

using Standard STEELOX Buildings. The panels are formed of Armco Galvanized Paintgrip Steel and can be painted immediately or left unpainted. No treatment is necessary. All-steel construction is an excellent fire-barrier. Steelox Buildings have the long life and low upkeep of a permanent structure, yet when necessary can be quickly dismantled and re-erected at another location. All parts are uniformly strong yet light in weight for easy handling.

STEELOX Buildings are prefabricated in a wide range of standard sizes to fit your requirements. Write for prices and complete information. Armco Drainage & Metal Products, Inc., 1615 Curtis Street, Middletown, Ohio.

Schenectady, N. Y.—General Electric Co. W. S. Ginn has been appointed assistant manager of sales in the company's power transformer section.

Akron, O.—Goodyear Tire & Rubber Co. Claude E. Davis has been appointed field engineer in the Midwest, a new post. He will supplement the work of company engineers in Akron, aiding mechanical goods field representatives in obtaining technical on-the-job data, and supervising the installation of conveyor belts in mines and other operations.

Glenshow, O.-Mining Division, Kennametal, Inc. Robert T. Smith has been named sales representative to cover the state of Ohio.

San Francisco, Colif.—General Electric Lamp Department. F. M. Falge, assistant manager of the Pacific Sales District. has succeeded Morris C. Hixson as mana-





F. M. Falge

Morris C. Hixson

ger. Mr. Hixson has retired after thirtysix years' service with the General Electric Company, and fourteen years with the Pacific Sales District.

Chicogo, III.—Pump Division, Fairbanks. Morse & Co. L. A. Weom, with the company since 1929, has been appointed manager of the division, to replace Arnold Brown, resigned.

Philodelphio, Po.—Monsanto Chemical Company. A new office has been opened in the Widener Building, at Juniper and Chestnut Sts., to handle all Monsanto sales.

New York, N. Y.—Southern Alkali Corporation, subsidiary of Pittsburgh Plate Glass Company. E. Wayne Haley has been named as director of sales, with offices at 30 Rockefeller Plaza.

Worcester, Moss.—Worcester Moulded Plastics Company. Ray Lambert has joined the company as New England sales representative, and will make his headquarters at the company plant, 14 Hygeia St.

Pikesville, Ky.—Mining Division, Kennametal Inc. Thomas C. Miller has been appointed sales representative to cover eastern Kentucky.

Motowon, N. J. — The Hanson-Van Winkle-Munning Co. Walter A. Cary has been assigned to the sales and service staff of the company in the New York state territory.

(Please turn to page 330)





# But...do you know how it can be Molded and Skaped to serve you?

• There is scarcely an industry that can't make profitable use of modern engineered Cellular Rubber in its products or processes. It is available now—and can be made to order in practically any form—molded to shape, in die cut designs, or in sheets, slabs, strips, cord, tubing, or bonded to fabrics.

Methods developed in our laboratories enable us to control density, tensile strength, resistance to oils and greases... chemicals... oxidation. Among the proven uses for our varied line of sub-density materials are: Sealing, Insulating, Cushioning, Dampening sound or vibration, Protective Packaging, Gasketing, Space Fill-

ing and Weatherstripping. One or more of these qualities may easily improve your product's efficiency, lengthen its working life.

Basic forms are: SPONGEX\*—with interconnecting cells; CELL-TITE\* soft—with individual cells. Foam rubber molded forms, and rubberized curled hair, wool or fibre are also available in sheet and die cut forms for cushioning, upholstering, or packing delicate instruments. Why not send for samples and prices. Sponge Rubber Products Co., 267 Derby Place, Shelton, Conn. Sales offices in principal cities. \*Trade-mark Reg. U. S. Pat. Off.

SPONGEX\*

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CELL-TITE\*

TEXLITE

TEXFOAM\*

TEXLOCK\*

SPONGE RUBBER PRODUCTS CO.

WORLD'S LARGEST MANUFACTURER OF CELLULAR RUBBER AND BONDED FIBRE PRODUCTS

## Don't lose your head over shortages!



When you need supplies and replacement parts fast, specify Air Express-and forget your worries. Your shipment arrives in hours, not days. Air Express brings your most distant suppliers close at hand. Even coast-to-coast overnight shipments are now routine.

Because Air Express goes on every flight of all Scheduled Airlines, your shipments never "grow moss"-never have to wait around for loads to accumulate. Rates are low, and you're getting better service than ever because of faster planes and increased schedules. For better, more profitable customer service, use Air Express regularly.

### Specify Air Express-it's Good Business

- Low rates—special pick-up and delivery in principal U.S. towns and cities at no extra cost.
   Moves on all flights of all Scheduled Airlines.
- · Air-rail between 22,000 off-airline office

Direct air service to and from scores of foreign countries.

Just phone your local Air Express Division, Railway Express Agency, for fast shipping action . . . Write today for Schedule of Domestic and International Rates. Address Air Express, 230 Park Ave., New York 17. Or ask for it at any Airline or Railway Express Office. Air Express Division, Railway Express Agency, representing the Scheduled Airlines of the United States.



Syracuse, N. Y .- The Emerson Electric Mfg. Co. Louis L. Schneider has been named representative for the company in upper New York and western Pennsylvania. His address is 209 Oakley Drive

Adrian, Mich.-Faraday Electric Corp. F. B. Fisher has been appointed assistant sales manager for the company, replacing C. L. Hobbs, who has returned to Chicago as branch manager of the Faraday

New York, N. Y.-Crescent Truck Co. Albert H. Cayne Co., 262 Canal Street, has been appointed dealer-distributor of Crescent products in the metropolitan

Boston, Mass. - Crescent Truck Co. George E. Miller Co. has been appointed exclusive dealer-distributor in the Boston, Providence, R. I. area for Crescent electric industrial trucks and tractors.

Long Beach, Calif.-Grinnell Company. A new branch warehouse, sales office and showroom have been opened at 1360 West Pacific Coast Highway. The branch will carry a complete stock of pipe, valves and fittings and kindred lines. W. F. Cook, sales engineer at the company's Los Angeles branch since 1938, has been appointed branch manager.

Cleveland, O. - Westinghouse Electric Corp. H. W. Lingefelter has been named manager of commercial, industrial and floodlighting sales for the Lighting Division here.

Philadelphia, Pa.-Henry Disston & Sons, Inc. Steel Distributors, Inc., Tioga and Salmon Streets, have been named distributors of the complete line of Disston tool steels.

#### INDUSTRIAL **DEVELOPMENTS**

Atlas Tool and Designing Co., Philadelphia, Pa., has changed its charter to the Atlas Chain and Manufacturing Co.

Jabsco Pump Co., Burbank, Calif., has moved its offices and factory into a new building at 2031 North Lincoln St.

Central Rubber & Supply Co., Indianapolis, Ind., has moved to larger quarters at 30 East Georgia St.

Air-Way Pump & Equipment Co., Chicago, Ill., has moved to a new building at 1050 K lbourn Ave.

The Charles L. Jarvis Company, Middletown, Conn., has acquired the Dowding division of the Henry L. Hanson Co., North Attleboro, Mass. The new owners intend to broaden the distribution of Dowding taps and dies to a national basis.

(Please turn to page 332)



## Guide for Selecting KENNEDY BRONZE GLOBE VAL



#### BRONZE DISC Screwed Bonnet

This valve is designed for standard pressure, general service. Like all Kennedy Bronze Globe and Angle Valves this type can be repacked under pressure when wide open.



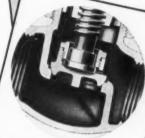
### RENEWABLE COMPOSITION DISC Screwed Bonnet

The discs in these standard. pressure valves are built to standard dimensions those carried in stock by all supply houses, Kennedy of fers various compositions each selected to meet specific operating conditions, The exceptionally high raised seat assures longer disc life.



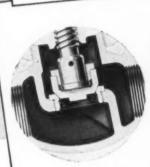
#### RENEWABLE COMPOSITION DISC Union Bonnet

The convenient Slip-on Disc Holder speeds up renewing the disc on these 150 lb. Kennedy valves. This holder is accurately guided in the body by four guided prongs which maintain alignment and prevent binding.



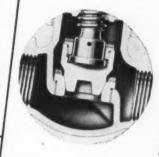
### REGRINDING DISC Union Bonnet

The discs of these 125 lb. and 200 lb. valves are deand 200 lb. valves are designed to permit repeated regrinding . . . without residue. The valve from the union bonnet ring and disc as used for 300 lb. Kennedy



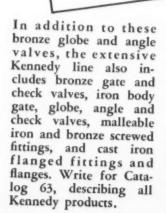
#### FULL-WAY DISC Union Bonnet Renewable Seat Ring

These 200 lb. and 300 lb. valves have renewable discs and seat rings of tough, wear resisting nickelcopper alloy. They can be furnished in special alloys to meet unusually severe service conditions.



#### PLUG-TYPE DISC Union Bonnet Renewable Seat Ring

The extra wide seating surfaces of these 200 lb, and 300 lb, Kennedy valves make them highly resistant to wire drawing. The plugtype disc design assures precise throttling control. Nickel-copper alloy for discs and seat rings are standard. Special alloys for unusual service conditions are avail-





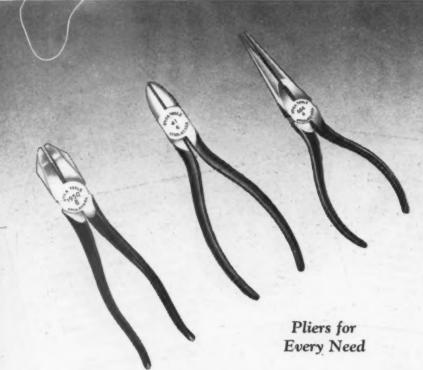
BUY FROM YOUR LOCAL DISTRIBUTOR

valves • pipe fittings • fire hydrants

THE KENNEDY VALVE MFG. CO., ELMIRA, N. Y:

Offices and Warehouses in Principal Cities





Ever progressive, UTICA has adopted a process of electronic hardening of the cutting edges of UTICA Tools to insure greater strength and longer life—still more tool mileage. Sold only through recognized jobbers.



The Glidden Compony, Cleveland, O., has completed a new plant in Chicago for the commercial recovery of soya sterols. The company expects to use part of the soya sterols obtained at the plant in the production of fine chemicals. The balance will be offered for sale.

U. S.-Mengel Plywoods, Inc., has completed an expansion in facilities at its branch warehouse-distribution unit at New Orleans, La. The new building contains 22,000 square feet of floor space, double that of the old warehouse.

Monsonto (Conodo) Limited has announced a general expansion program which will increase its overall Canadian productive capacity by at least 100 per cent in two years. A substantial increase will be made in productive capacity for phenolic resins which are produced at Montreal together with polystyrene.

Haydon Manufacturing Co., makers of electric timing motors, is moving offices and manufacturing facilities from Forestville, Conn., to Torrington, Conn., about



New Haydon plant at Torrington, Conn.

October 1. The modern plant facilities at Torrington will house the complete operations including executive offices, sales, engineering, service, production and warehousing.

The United Aluminum Costings Company has expanded its facilities by moving into a new plant at 3471 West 140th St., Cleveland 11, O.

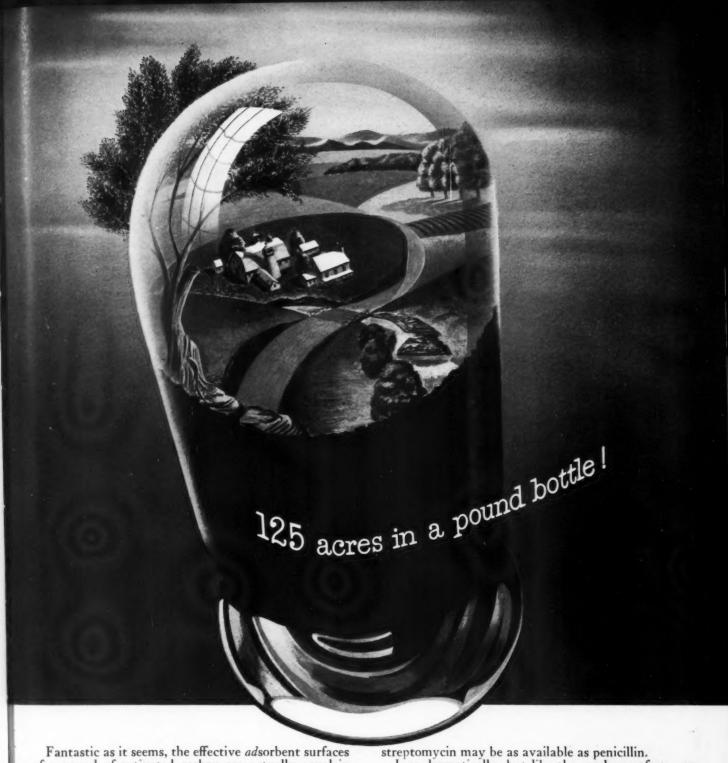
The Honson-Von Winkle-Munning Co., Matawan, N. J., has completed its new Stratford, Conn. office and warehouse at 382 Seymour Street. The installation will provide a stock of electroplating and polishing supplies and equipment for the New England area.

Sherwin-Williams Great Lakes Industrial Division opened September 1 in Grand Rapids, Mich. to provide complete finishing service for manufacturers in the Great Lakes area.

Carborundum Company has acquired land as a site for an extensive furnace plant at Vancouver, Wash. Present plans call for the erection of a silicon carbide furnace plant, including such units as buildings for the preparation of raw materials, a mixing plant and a crushing unit. The company is planning to spend upwards of \$2,000,000 in the proposed plant and its facilities.

The Long-Bell Lumber Co. has purchased from the American Lumber and Treating Co. a wood-preserving plant at Weed, Calif.

(Please turn to page 334)



Fantastic as it seems, the effective adsorbent surfaces of a pound of activated carbon are actually equal in area to about 125 acres.

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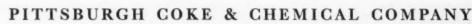
We don't pretend to know how this can be possible, but our research men, who understand such things, have figured it out scientifically. We like to think of what it does rather than how it does it.

For example, when used to isolate streptomycin from the mold liquor in which it is produced, a Pittsburgh

activated carbon, tailor-made for this purpose and with greater adsorptive capacity, assisted materially in the rapid development of a process with a capacity sufficient to permit removal of the "wonder drug" from the government's critical list. Soon

Less dramatically, but like the producer of streptomycin, a manufacturer of water purification systems for homes, institutions, and industries tested every available adsorbent and then selected a *Pittsburgh* activated carbon which was specifically designed to meet the exacting requirements of his purification systems.

exacting requirements of his purification systems. If your "problem" involves the use of an adsorbent, in gas or liquid phase, for purification, solvent recovery, decolorization, deodorization, fractionation, isolation, catalysis or air conditioning, you should investigate the adaptability of activated carbon to your processes. Pittsburgh activated carbon is produced in the types and grades usually required, or a special type can be developed for your specific need. Your inquiries are invited. Write for latest price list.



Grant Building · Pittsburgh 30, Pa.

# What type of STAINLESS FASTENER do you need?



### Prompt delivery from the largest stock in the nation!

Screws...nuts...washers...
pins...Allmetal carries the largest
stock in the country of stainless
steel fasteners and screw machine
parts. We also have facilities for
heading, tapping, drilling, reaming, slotting, turning, stamping,
broaching and centerless grinding
... and we work not only with
stainless and monel, but also wifh
duralumin, aluminum, brass,
bronze, or any other non-corrosive
metal. All parts produced to close
tolerances. Write for our catalog
today. Allmetal Screw Products
Co. Inc., 33 Greene St. New York, 13.

### Send for FREE CATALOG



This new, 83-page catalog helps you select the correct size and type of non-corrosive fastening device for any particular job. Includes stock sizes, specials that can be made, engineering data, etc. Make request on company letterhead.

Write to Department PG

ALLMETAL SCREW PRODUCTS CO., INC.

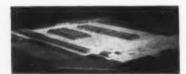
33 Greene Street, New York 13

SPECIALISTS in STAINLESS FASTENERS Pennsylvania Coal Products Co., Petrolia, Pa. and Wailes Dove-Hermiston Corp., Westfield, N. J., wholly owned subsidiaries of Koppers Co., Inc., have become integral parts of the parent company. They will be known as Pennsylvania Coal Products Department of the Koppers' Chemical Division, and the Koppers' Tar Products Division, respectively.

Cressell Stoinless Steel Co., 333 North Michigan Ave., Chicago 1, Ill. has been established as a sales service engineering company to handle sta nless steel in all forms.

Sperti, Inc., Cincinnati, O., manufacturers of electrical products, has acquired the Faraday Corporation, at Adrian, O. The plant will be known as Sperti-Faraday.

Carborundum Company, Niagara Falls, N. Y., has purchased the former Bell Aircraft Corp. property and buildings on Walmore Road, that city, from the War Assets Administration for \$1,000,000.



View of new Carborundum Co. property

Included in the sale were four buildings with a total floor area of 290,000 square feet and approximately 65 acres of property. The property has been acquired primarily as a manufacturing space for the coated products division.

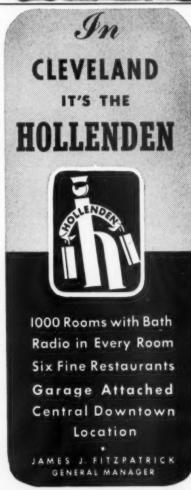
Progressive Welder Co., Detroit, Mich., has acquired the Warren Alloy and Machine Co. of Warren and Detroit.

The Texos Company has completed the first small fluid cat-cracker to be built since the end of the war, at the Casper, Wyo., refinery of the company. Rated at 4000 barrels per day capacity, the new unit is intended to serve as the focal point of an expansion and consolidation program of the company at Casper. The cat-cracker was designed and constructed by the M. W. Kellogg Co., New York, N. Y.

plant facilities at Hornell, N. Y., that will enable the firm to achieve an 80 per cent increase in production of pillow blocks at peak operation. The transfer to Hornell of the company's cast iron department and of the bearing retainer department to Shippensburg, Pa., is part of a two-year \$4,000,000 expansion and modernization program.

The Electric Auto-Lite Company will add the twenty-eighth to its group of manufacturing plants upon completion of the one now planned for Hazleton, Pa. The new plant, covering hundreds of thousands of square feet, will be used for the manufacture of automotive wire and cable.





# You Reduce ERECTION

Costs

...When You Install LADISH

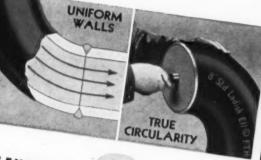
# RAPID, POSITIVE ALIGNMENT ...

Installation is swift and sure with sound, uniform welds at lower cost through the rapid, positive alignment of Ladish Seamless Welding Fittings. Matching the pipe accurately in both wall thickness and circularity, OD alignment insures perfect ID alignment . . . offsets are eliminated and smooth, uninterrupted flow results without the danger of erosion pockets.

# SOUND, UNIFORMLY FAST WELD

Strong, sound welds are an important installa tion economy which results from controlled metal purity and accurate, machine-beveled ends of Ladish Seamless Welding Fittings.

Rigid metallurgical controls—evidenced by the Ladish heat code-safeguard against impurities such as slag and sulphur, thereby assuring the uniform weldability of every Ladish Fitting.



# FLEXIBILITY IN PIPING DESIGN

Ladish Seamless Welding Fittings offer the thrift that goes with complete flexibility in piping system design.

True circularity permits cutting odd-angle sections for special piping makeup . . . while geometric accuracy facilitates economical prefabrication of large, complicated sections on the ground with assurance that they will fit perfectly into the system.



# EASY, ECONOMICAL INSULATION

As easily covered as the pipe itself, Ladish Seamless Welding Fittings assure important savings in erection costs by simplifying the application of insulation. Smooth, unbroken surfaces require no special treatment to increase application costs. Since their welded joints are permanent, no provision is necessary for removal of insulation to inspect, repair or tighten joints.





CUDAHY, WISCONSIN MILWAUKEE SUBURB

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# INFORMATION ON HOW TO SAVE UP TO 50% ON DUST COLLECTION EQUIPMENT

Simply write, wire, phone or, better yet, VISIT your nearest Customer Service Center. Ask at the desk for brochure #1332 on Program A-80-2017. It illustrates the types of equipment available and tells how to buy it. Request also the latest listings and sales announcements covering equipment

now available, specifications, prices and other pertinent data. You'll be able to select the equipment you need from inventories located in Boston, Chicago, Cincinnati, Cleveland, Los Angeles, New York, Philadelphia, Richmond, and San Francisco... and do it right in your own locality.

EXPORTERS! Your business is selicited. Much material which is surplus in the United States is urgently needed or is readily salable in other countries. Watch for other offerings; many of them may be of interest to your clients. WAR ASSETS ADMINISTRATION

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# DUST and DIRT CAN'T HURT WAGNER CP MOTORS\*

\*Totally-Enclosed Fan-Cooled Motors are SEALED against Harm...

THEY'RE built to take it... They're protected against dust, dirt, grit, steel chips, abrasives, and other destructive elements that would tear the heart out of ordinary motors. That's why you find thousands of Wagner totally-enclosed fan-cooled motors giving dependable service day after day, year after year, doing the dirty jobs in industry without asking favors.

If you use motors, it will pay you to investigate Wagner—A complete line...built by engineers who know how to build quality motors that will

help you maintain peak production. Users of Wagner motors also profit by our quick, convenient, nationwide service facilities.

Contact any of our twenty-nine branch offices, located in principal cities and manned by trained field engineers ready to give you advice on all of your motor problems. Bulletins on the complete line of quality motors will be sent upon request. Address Wagner Electric Corporation, 6360 Plymouth Avenue, St. Louis 14, Mo.



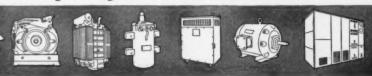
Pictured above is a Wagner totally-enclosed fan-cooled motor. Wagner makes a complete range of motors for every application.

Wadner

Electric Corporation

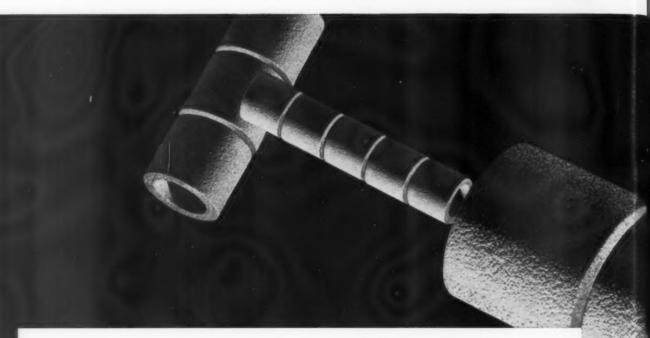
Est. WE 1891

Consult Wagner Engineers on all Electric Motor Problems



BRIDGE BRAKES . POWER AND DISTRIBUTION TRANSFORMERS . MOTORS . UNIT SUBSTATIONS

ELECTRICAL AND AUTOMOTIVE PRODUCTS



# Knock out the bugs in your grinding department

Bugs in your grinding department?

There may be—even though you don't suspect it!

Here's how to find out: call in Peninsular Engineers, specialists in grinding problems since 1889. They will study your grinding completely—your equipment, material to be ground, and all other factors that influence grinding costs.

Results learned will enable Peninsular to propose remedies to knock out any excess-cost grinding practices you now have. Whether your grinding operation is up-to-date or moth-eaten, chances are the Peninsular analysis will save you dollars.

**Peninsular Engineers** have been cutting production expenses substantially for 58 years right in your own industry.

The Peninsular Grinding Wheel Co., 729 Meldrum Ave., Detroit 7. Sales Offices: Chicago, Philadelphia, Boston, Buffalo, Cleveland, Pittsburgh, Houston, St. Louis, Cincinnati.

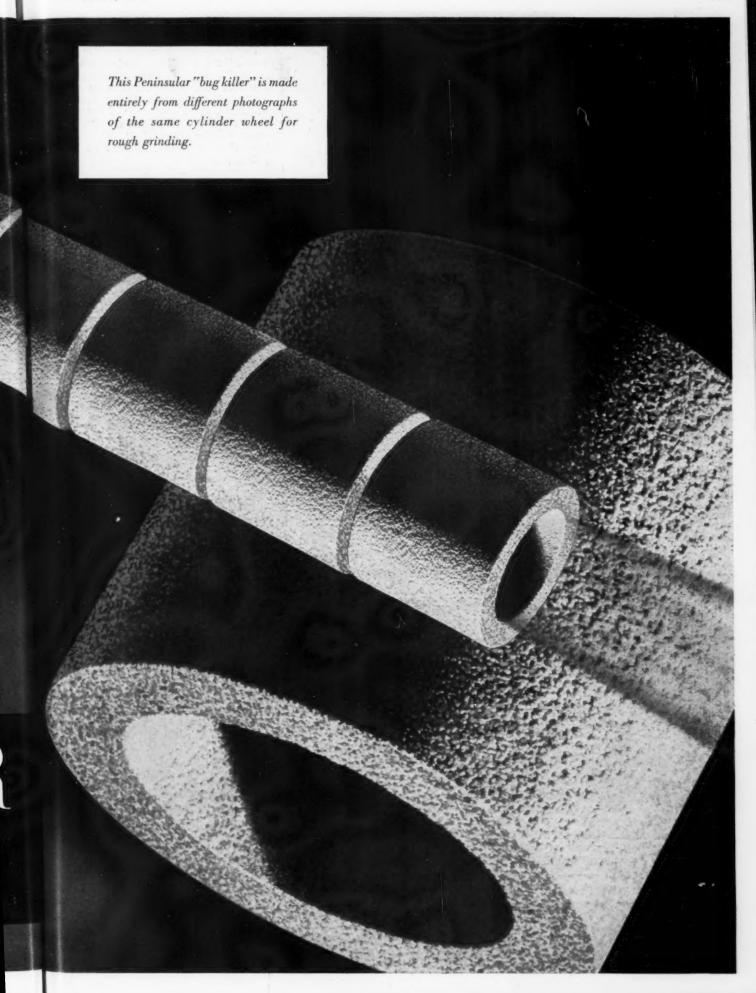
# PENINSULAR

INDIVIDUALLY MINSULAD ENGINEERED

GRINDING WHEELS

SINCE 1889

SPECIALISTS IN RESINOID & VITRIFIED BONDED WHEELS





### RAYBESTOS-MANHATTAN INC. ANNOUNCES APPOINTMENTS

Raybestos-Manhattan, Inc. recently announced the following appointments in its Equipment Sales Division: Harry C. Dishman, Equipment Sales Manager with headquarters in Detroit, Mich.; George T. Young, Branch Manager of the Detroit office; E. E. Juergens, Branch manager of the Cleveland, O., office; and John E. Cole, branch manager of the Chicago, Ill. office.

#### ROBSON NAMED RUBBERSET VICE-PRESIDENT AND SALES MANAGER

Elmer L. Robson was recently elected vice-president and general sales manager of the Rubberset Company, Newark, N. J. He succeeds Elwood M. Jones, Jr., new executive vice-president of the company.



Elmer L. Robson

Formerly vice-president and general sales manager of Rubberset Co. Ltd., Canada, and a member of the board of directors of that company, Mr. Robson has had a distinguished sales career and is well known for his successful merchandising and sales poromotion activities in all phases of distribution.

### FINNIN NAMED AIR EXPRESS MANAGER

James B. Finnin has been appointed manager of Air Express for the Eastern Departments of Railway Express Agency, succeeding R. G. McLain who has been named superintendent, Commercial Division, New York City Department. Mr. Finnin will be in charge of air express activities in the east from Washington, D. C. to Montreal, Can., and west to Pittsburgh, Pa.

#### GOODYEAR MAKES SHIFT IN SALES ORGANIZATION

Three shifts in the sales organization of Goodyear Tire & Rubber Co.'s Mechanical Goods Division have been announced.

R. E. Pauley, district manager at Pittsburgh, becomes sales manager of the company's molded goods plant at St. Marys, O. He is succeeded by Robert B. Warren, who has been eastern railroad sales manager for Goodyear in New York city.

(Please turn to page 368)

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### UNITED STATES RUBBER COMPANY

SERVING THROUGH SCIENCE

## With a Lift of Her Finger... She Raises Pressure by the Ton!



Here, on a specially-designed machine, "U. S." engineers have taken a grinding wheel sample and just tested it to destruction!

But before this grinding wheel reached the breaking point, it had proved its ability not only to meet, but to surpass, the strict speci-

fications demanded by the customer's job.

Thorough testing in "U. S." research laboratories is one of the reasons why U. S. Royalite Grinding Wheels are so much in demand, testing that covers not only abrasives and bonds of every kind, but also the sives and bonds of every kind, but also the related fields covered by all the products of United States Rubber Company. Then there's the test of time. Experience

built up in the course of 84 years enables "U. S." to solve current wheel problems of

"U. S." to solve current wheel problems of every type—and to anticipate future problems brought on by higher production quotas and new manufacturing techniques. As a result, whether you're snagging castings, grinding ball races or working with billets, bits, slabs or sauce pans, you'll find a U. S. Royalite Wheel carefully engineered to your job. In addition, "U. S." field registers by thorough testing right in neered to your job. In addition, "U.S." field engineers, by thorough testing right in your own plant, can give you accurate grinding wheel costs in advance.

For complete information, write to Mechanical Goods Division, United States Rubber Company, 1230 Avenue of the Americas, New York 20, N. Y.

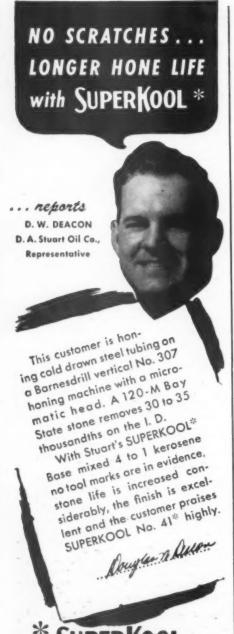


When this midwestern iron foundry adopted high speed snagging 17 years ago, it picked U. S. Royalite Wheels. It has been using them ever since on the basis of their superior performance.

## U. S. ROYALITE GRINDING WHEELS

ENGINEERED TO YOUR JOB





... Stuart's Superkool is a concentrated base cutting oil with high anti-weld capacity and low frictional characteristics. Its light color affords clear visibility on operations where close gaging or constant inspection is necessary. Superkool is chemically stable, sterile, and has no objectionable odor. These are only a few of the reasons why it has been a standard in hundreds of plants for over twenty-five years.

Ask to have a Stuart Service Engineer discuss your cutting fluid requirements. SUPERKOOL Booklet available on request.

STUART service goes
with every barrel
WRITE FOR DETAILS



2727-31 SOUTH TROY STREET, CHICAGO 23, ILL.

#### Buying for the United Nations

(Continued from page 135)

ernment to sell materials and equipment to U. N. Excellent cooperation and friendly aid was extended by the Government Printing Office, Treasury Procurement Department, War Department, Navy Department, and the City of New York.

Speaking of typewriters, dozens of requests were received for ma-chines with foreign keyboards. It was difficult enough to obtain typewriters with standard keyboards, but requests for Spanish, French, Russian, Polish, Norwegian and other language machines gave us some knotty problems. We learned, for example, that there is no "standard" Russian keyboard. The letter symbols to be used had to be selected and the arrangement of keys had to be designed. French and Spanish equipment, the letters used are identical with English, but we had to provide accent and punctuation marks characteristic of these languages: this was done by converting standard American machines to the type desired. We bought two Chinese typewriters in China, and paid something over 12 million dollars for them. Of course, they were Chinese dollars, and the official rate of exchange was about 12,000 to one American dollars; so we have a taste of international finance as well.

Another characteristic of purchasing, particularly at the outset, was the problem of filling the requirements of departments staffed by men and women of all nationalities who were strangers to America and American products, and unfamiliar with our office procedures. There were language difficulties to overcome. One requisition came to us, carefully translated into English as "one desk chair for a typist with

a revolving seat". So even our most hectic days were not without their lighter moments. Incidentally, we soon learned that there is often quite a difference between the "English" and "American" languages.

As for requests for items of foreign manufacture, we have been able in most cases to substitute comparable American products. One principal exception to this is special equipment such as shorthand machines required by stenographers whose training and experience has been on some foreign machine exclusively.

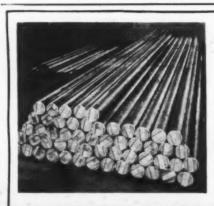
Among our most interesting problems are those of buying equip-

ment and supplies for U. N. offices in other countries. We found, for example, that to equip a Shanghai office with second-hand equipment purchased in China would cost \$6,600, whereas similar items of new equipment could be purchased here and shipped to Shanghai at a total cost of about \$4,000.

There is also a problem of what to do with equipment purchased for temporary use abroad, when the work of such a commission is completed. Bearing in mind that the same items may again be required by a similar group planning to meet somewhere in the same general area. it is our plan to keep equipment once furnished to some foreign area right in that vicinity, possibly with one storage point located in Europe and another in the Far Operations of this nature have been comparatively few thus far, but as U. N. activities are reaching ever more frequently to distant points, the plan gains additional merit.

Contracts for motion picture and other film work have been extensive. We have made basic contracts for film to be shot in many countries throughout the world, and re-

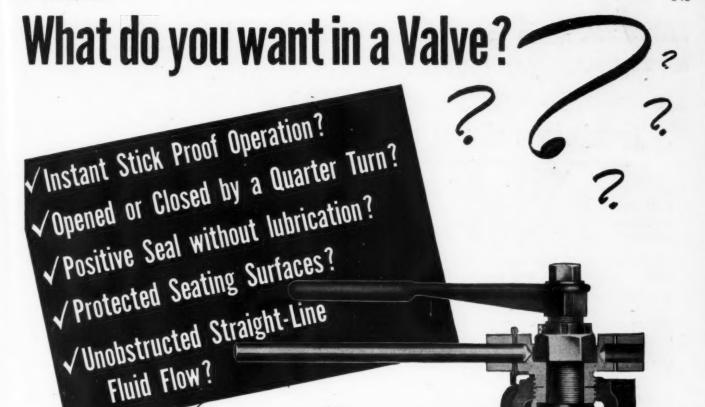
(Please turn to page 344)



## Welded Stainless Tubing

Uniformity in roundness and in quality of welding characterizes Pittsburgh Piping Welded Stainless Tubing. Available in most stainless alloys, in sizes 4" O.D. to 14¾" O.D., and in wall thicknesses ranging from 7/64" to 1/2". Write for data sheet.

PITTSBURGH PIPING & EQUIPMENT CO. 10 FORTY-THIRD ST.,



Then you want

HOMESTEAD

LEVER-SEALD

VALVES

Built into each valve is a powerful lever-and-screw device that prevents sticking and assures positive action at all times and under all conditions. Corrosive or viscous fluids, extremes of temperature or pressure or other adverse operating conditions that cause ordinary valves to fail cannot affect Homestead Lever-Seald Valves.

Operation is simple and easy. Seating pressure is first relieved with the lower lever just enough to overcome friction. Then a quarter-turn of the upper lever fully opens or closes the valve. Full seating pressure is again applied with the lower lever to make a positive, leakless seal. They operate faster, too . . . 16 to 28 times faster than screw-stem-type valves. The quarter-turn principle makes them ideal for installation in restricted areas, next to walls, floors, ceilings, congested piping and other obstructions where many other types of valves could not be operated.

Homestead Lever-Seald Valves are available in combinations of metals and alloys to meet your service requirements. Sizes range from 1½" to 10" for pressures from vacuum to 1500 pounds.

For complete details write for Valve Reference Book No. 38 . . . today.



## MORE THAN MATERIALS to help solve all your cleaning problems

. . and that list of more than 70 is comprehensive. For example, there are Oakite alkaline compounds specially designed for degreasing and surface preparation jobs. Safe-to-use acidic type materials for speedy rust and scale removal. Others, such as solvents, to remove pigmented greases, buffing compounds and carbon deposits. Still others for steam-cleaning, deodorizing, chemical sterilization and rust-proofing.

Equally important is the fact that those materials are backed by nearly 40 years of Oakite in-plant service solving industrial cleaning problems; simplifying cleaning cycles. If there are cleaning procedures in your production picture, chances are the combination of Oakite materials and service can put those operations on a low cost, efficient basis. Contact us at Oakite Products, Inc., 54 Thames St., New York 6, N. Y.

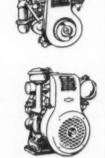
SPECIALIZED CLEANING MATERIALS . METHODS . SERVICE

Technical Representatives in Principal Cities of U.S. & Canada

It isn't the original H.F. rating at an engine that counts but rather, the number of H.P. Hours of power service it will deliver during its lifetime. This, in the final analysis, is the real measure of engine value.

Wisconsin Air-Cooled Engines deliver the most H.P. Hours because they are designed and built for rugged, heavy-duty service. For example: every Wisconsin Engine, from the smallest to the largest, runs on Timken tapered roller bearings at both ends of the crankshaft to take up endthrust and provide the best protection against bearing failure . . . at the same time assuring a smooth-running engine. This is just one typical detail that stands back of "Most H.P. Hours" of on-the-job power service.

You can't go wrong if you specify "Wisconsin Air-Cooled Engines" to meet your power requirements, within a 2 to 30 hp. power range.





Wisconsin Engines are available in a complete range of types and sizes (all 4-cycle) from 2 to 30 hp.

#### WISCONSIN MOTOR Corporation

MILWAUKEE 14, WISCONSIN

World's Largest Builders of Heavy Duty Air-Cooled Engines

#### Buying for the United Nations

(Continued from page 342)

cently arranged for filming conditions prevalent in Greece and India

Unusual purchase requests are frequent and welcome diversions from the "run of the mill" variety.

Taxes are a problem with us as in all purchasing. The City of New York has granted U. N. an exemption on all purchases to which the City tax would normally apply. We are also exempt from excise taxes on transportation and communications, but must pay all other taxes.

The international character of the organization gives our purchasing a foreign flavor at times, but our objectives are identical with those of every purchasing agent who ever lived — to get the best item we can, for the least cost, as promptly as it is needed.

#### Increasing Tax Dollar Mileage By Centralized Purchasing

(Continued from page 138)

the cost of doing business with public purchasing agencies, and we eventually pay these costs in higher priced goods.

Savings in the cost of operation of the purchasing department can be made and more efficiency can be achieved if an organization chart is prepared and the duties of each position analyzed. In this way effectiveness of employees is in-creased, overlapping of duties eliminated and fewer mistakes of omission and commssion are made. An official manual of purchasing will also increase the efficiency of the department, serving as a quick means of inducting new employees. and providing an effective guide in the daily work of all staff mem-

In order to make further consistent savings, a standardization committee should be created to simplify, standardize and acquire suitable specifications. Savings will be made not only through obtaining more suitable materials for the purpose, but because of result-

ing competition.
Yes, "Thar's gold in them hills." All that is required is to give a good man effective tools to work with and make him responsible for getting it out. Analyze your purchases. Take nothing for granted. Do not be satisfied with present procedure just because it has been done that way before.

# You Furnish the STEEL





(Gauges from 8 to 30)

# will make the Product

-- and give you prompt delivery

Here's how you can speed up plant expansion, boost production, or turn surplus steel inventory into cash.

(1) If you can supply us with 16 to 24 gauge sheet steel, we will supply you pound for pound with any selection of Lyon standard products now in production.

(2) We will manufacture to specifications, in Lyon Production run quantities, assemblies, sub-assemblies, or parts in gauges No. 8 and lighter up to No. 30.

Write or phone your nearest Lyon dealer or district office.

METAL PRODUCTS, INCORPORATED General Offices: 1033 Monroe Ave., Aurora, Illinois Branches and Dealers in All Principal Cities

#### OF LYON PRODUCTS LIST

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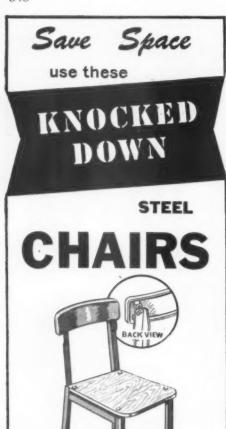
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- Wood Working Benches
   Hanging Cabinets
- Economy Locker Rocks Welding Benches
- Filing Cabinets Storage Cabinets Conveyors Tool Stands
- Display Equipment Cabinet Benches Bench Drawers Shop Boxes Service Carts
  - · Bar Racks
- Flat Drawer Files
- Tool Trays Tool Boxes
- Desks
- Hopper Bins · Parts Cases · Stools
- Sorting Files
   Ironing Tables



- Kitchen Cabinets
- Folding Chairs • Drawing Tables
- · Work Benches
  - . Bin Units • Drawer Units



A sturdy chair for shop or plant. Packed K.D. 8 to a carton . . . saves storage and shipping space. Easily assembled by anyone.

- . HEAVY STEEL CONSTRUCTION
- . ALL EDGES SMOOTH
- EXTRA LARGE 5 PLY PLYWOOD SEAT
- . ADJUSTABLE BACK REST
- . CHAIR WILL NOT TIP OVER
- COMPLETE INSTRUCTIONS FOR EASY ASSEMBLY BY ANYONE.

We are offering this K.D. chair at a lower price than any other manufacturer.



#### Personal Contacts Are Important

(Continued from page 91)

seek out the buyers, it has been the other way around. Many a salesman has undoubtedly had to pinch himself to make certain he wasn't dreaming. Where once he would spend hours or days to get a brief interview with the purchasing agent, during the war he found himself welcomed like the company's biggest stockholder, introduced to the President, called by his first name, and made to feel that he was the most important fellow on earth.

Now, we all know that was an abnormal situation and one that won't prevail in the future. But a happy medium should be reached where, first of all, salesmen will always be given a cordial reception and, secondly, the purchasing agent will use his own salesmanship to gain maximum cooperation from suppliers. Being friendly with salesmen doesn't mean wasting a lot of unnecessary time with them or going out and getting drunk if they ask you to. It means being honest and fair with them, not giving them a cold brushoff or keeping them waiting when it can be avoided. It means selling them on your company and its future so they will consider your account a most desirable one to have and render every service to get it and keep it.

One of the most important things a purchasing agent can do today is to gain a thorough knowledge of the companies on whom he will depend for his supplies in the future. Learn all you can about their facilities and what they have to offer you. the new lines and services that they may have developed since the end of the war. In the case of very important suppliers it will be profitable to make visits to their home offices or plants, meeting their personnel there. During these plant visits you will have the opportunity to become acquainted with the problems of the manufacturer, as well as to explain yours. You will learn many things that will help you and your company, and, most important of all, you will introduce that personal element into your dealings. It's very easy for a large concern to turn down a request from the Blank Manufacturing Company, but when Bill Jones (who visited them a few months ago) wants something special done, that's altogether differ-

Another advantage of the plant (Please turn to page 348)



#### We'll Design Them for You or Make Them Exactly to Your Specifications

Either way, you'll be assured of precision workmanship — of getting springs that are all ways good — all ways uniform — that fit in as they should in assembly and perform as they should in service.

Where we are allowed to help in the design and engineering, our specialized experience often develops better, simpler ways of meeting spring requirements — substantially reducing costs on many jobs.

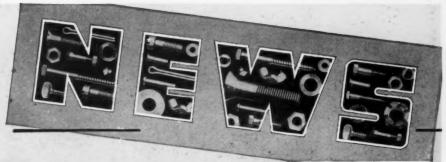
Try us and see. Prompt service, large orders or small.

Inquiries Invited



BERKSHIRE 6464 2100 N. MAJOR AVE., CHICAGO 39, ILL.

# HARPER fastening



## "USE-HISTORIES" PROVE THE VALUE

OF HARPER NON-FERROUS AND STAINLESS STEEL FASTENINGS



### BOILER MAINTENANCE SIMPLIFIED

A large manufacturer of steam generating equipment employs Harper non-rusting, non-corroding brass nuts to fasten face plates on boilers. This service requires strength and non-cor-

rosive properties, in the presence of moisture, to permit removal of plates for servicing. Brass, Bronzes, Monel Metal and Stainless Steels, used exclusively by Harper, will not rust or corrode.

# AVOIDING TROUBLE IN PUMPS

Fastenings for internal parts of a well-known water well pump are specified as Harper non-ferrous. This means that the manufacturer can assemble the units and be certain that rust and corrosion will not attack the vital "works" of the pump. Longer life and minimum maintenance are the result. . . . Although rust and

corrosion are commonly associated with water and brine, there are many other agents which are harmful to common steel. Whatever your problem, the solution may be in the use of non-ferrous or stainless steel.





MACHINE TYPE FASTENINGS AVAILABLE AT HARPERS

A special department for manufacturing fastenings of the heavy machine type is an outstanding service at Harper. Any quantity, any size, any shape, any nonferrous or stainless steel alloy can be

made quickly to almost any required tolerance. Ask us about any fastening of a special nature that you require.

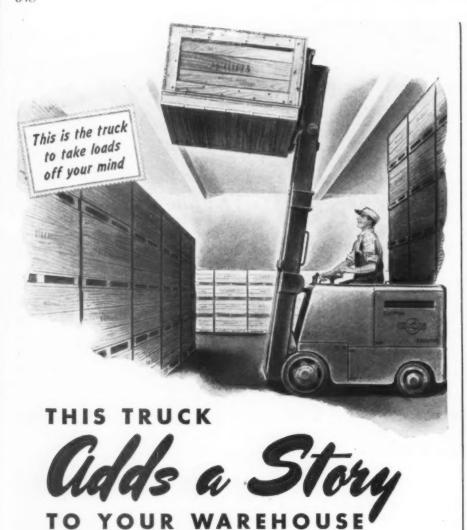


The H. M. HARPER COMPANY
2606 FLETCHER STREET
CHICAGO 18, ILLINOIS

Branch Offices—New York City, Philadelphia, St. Louis, Los Angeles, Milwaukee, Cincinnati, Dallas, Cleveland



HARPER SPECIALIZES IN EVERLASTING FASTENINGS



THE extra space you looked for down the length and across the width of your warehouse, the Crescent PALLETIER finds high above the floor. With the reach of a giant, the PALLETIER stacks pallet loads to the rafters. It may double your storage capacity...save the cost of a new building.

Hour after hour, the Crescent PALLETIER lifts, totes, tiers, climbs ramps, speeds loading and unloading ... shrinks handling time and costs.

Write for free PALLETIER bulletins.

CRESCENT TRUCK COMPANY 1150 Willow St., Lebanon, Pa.

Industrial Truck and Tractor Specialists Since 1917

## ONLY Crescent HAS ALL 5

- Full Magnetic Contactor Control protects against forced acceleration—extends life of motor and tires.
- Complete Stability with load fully elevated and tilted forward.
- Battery Power eliminates fumes and fire hazard.
- Full Accessibility to all mechanisms for easy inspection and maintenance.
- Maximum Visibility—operator spots and tiers without stirring from seat.

Crescent ELECTRIC PALLE ILER REG. U. S. PAT. OFF.

#### Personal Contacts Are Important

(Continued from page 346)

visits and the closer team work with suppliers is that the purchasing agent may find ways to make minor changes in his specifications or requirements that will enable him to secure a satisfactory alternate on a better basis or with a quicker delivery. Also, when you know the personnel at a supplier's plant and they know your requirements, they may be able to help you out when there is a cancellation or over-run on a material or item you need. When you not only have the sales-man "on your side" but also others (whether it is the President or Sales Manager or the Order Clerk) you are going to get preferential treatment where it counts most. Even when dealing with the very largest concerns, there is no stronger influence than personal friendship. Every company is made up of individuals who want to do favors for people they know and like.

There is one word of caution, however, in connection with our suggestions about plant visits, meeting the personel, etc. Don't ever sell the local salesman or make it a habit to "go over his head" and try to handle your business "direct with headquarters". Whatever you do should be with his cooperation and understanding. You don't want him calling on the President of your company when you are the one responsible for purchases, and the same thing is true in your dealings with the officials or others in his company. But there are ways to coordinate these contacts and accom-

plish your objective.

You'll find that this matter of closer contact with your sources of supply is not only effective. There's also a lot of pleasure and satisfaction connected with selling the people who are selling you.

One Container Fits Complete Line

(Continued from page 103)

pack, and requiring a minimum of warehouse space before use because it is easily and safely stacked.

Two employees can pack a unit in seven to eight minutes, as compared with approximately 15 minutes formerly required. The entire packaging process entails eight steps. It starts with the boring of

(Please turn to page 350)

## How a NI-ROD build-up saved a 3-month lay-up

From Canada comes the story of how the cast iron main gear of a big power shovel, made in England, had stripped 74 of its 76 teeth.

Getting a new gear meant a delay of 3 to 4 months ... and the shovel was urgently needed. So, the owners called the Bowers Machine Company of Canada to repair the

Welding seemed the only solution. But, cast iron welds

were generally considered risky propositions. So, Bowers turned to G. D. Peters and Company, Ltd. for their

Yes, indeed, Peter's men reported, it was possible to build up this gear. But, it called for careful control ... and a high quality Nickel-cored electrode called Ni-Rod.

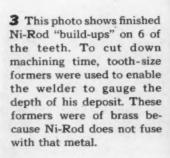
See below the step-by-step picture story of how this unusual job was done.



1 After degreasing in carbon-tetrachloride, and a thorough cleaning, the damaged teeth were ground down to offer a smooth surface for welding. Where teeth were broken off flush, holes were drilled in the rim and tapped. Studs were then inserted to lend extra support to the new teeth.



2 Before welding, the heavy cast gear was suspended over a temporary oven and heated with an oil torch to 600° F. This eliminated stresses and the possibility of cracking. The welding electrode used was 1/8" Ni-Rod at 95 amperes. After making one pass on one tooth, the gear would be given a quarter turn to assure even distribution of the welding heat.



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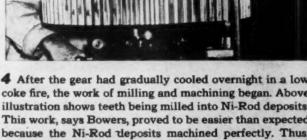
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4 After the gear had gradually cooled overnight in a low coke fire, the work of milling and machining began. Above illustration shows teeth being milled into Ni-Rod deposits. This work, says Bowers, proved to be easier than expected because the Ni-Rod deposits machined perfectly. Thus, instead of a 3 or 4 month lay-up, the excavator was back



Ni-Rod comes in 3/32" to 3/16" diameters. Order a 5-lb. package and you'll agree it's the solution to any cast iron welding problem calling for strong, crack-free, machinable joints. Write for free Ni-Rod instruction booklet.

THE INTERNATIONAL NICKEL COMPANY, INC.





GET NI-ROD FROM:

on the job in less than 2 weeks.

Whitehead Metal Products Company, Inc.
Steel Sales Corp.
Pacific Metals Company, Ltd.
Eagle Metals Co.
Robert W. Bartram, Ltd.
Wilkinson Company, Ltd.
Hollup Corporation
Water Sales, Ltd.
Metal & Thermit Corporation
National Cylinder Gas Company



\*Beg. U. S. Pat. Off.

# 45 CHOICES

# A <u>Different</u> FULLER Industrial Cotton Wet Mop for Each Cleaning Condition

CHECK THIS CHART FOR SIZES AND STYLES

Types of Yarn	Types of Construction	Weights & Lengths (each type of construction)	Recommended Uses
Standard 4 Ply	Narrow Tape Wide Tape Solid Head	12 oz. 12" 16 oz. 16" 20 oz. 24 oz. 20"	High Grade Floors Varnished Wood Tile Linoleum Rubber
9 Ply	Narrow Tape Wide Tape Solid Head	12 oz. 12" 16 oz. 16" 20 oz. 24 oz. 32 oz. 20"	Rough Wood Concrete
30 Ply Large Strand or Rope	Narrow Tap Wide Tape Solid Head	20 oz.)	" Hard Scrubbing or



Fuller's Research Division continually studies different cleaning requirements. The result is the 45 industrial mops shown in the chart above. All are designed to give long wear, maximum absorbency, and easiest rinsing.

Your Fuller representative can recommend the mop which will give you maximum service under your particular conditions. If you would like a copy of the above chart, simply write to ...

INDUSTRIAL DIVISION

The FULLER BRUSH Co.

DEPT. 970

HARTFORD 2, CONN.

#### One Container Fits Complete Line

(Continued from page 348)

holes at predetermined places on the base of the box, according to the specific requirements of the particular unit being packed, and ends with the driving of a dozen or so nails for added strength and

rigidity.

Each Homelite unit is given a thorough factory test before being shipped, and thus contains oil when it is placed in the container. The wirebound box has been found to deliver the units in such perfect, clean condition that they can be put into operation immediately upon unpacking. Formerly, units frequently had to be cleaned first because of dirt and dust that entered the container and were held by the oil.

Skids on the base are incorporated in the box design, allowing for ease in handling. Homelite officials state that the box has been in use for over a year without even one instance of damage during transportation. These units have a worldwide reputation and market, and many are being shipped overseas in the identical wirebound box that is used for domestic shipments.

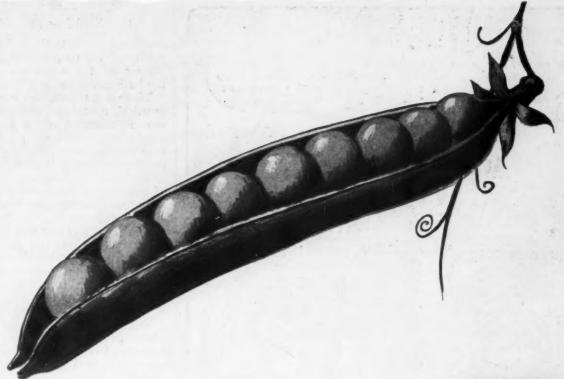
#### Case Study in Education

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(Continued from page 102)

sense, the purchasing agent doesn't determine what is to be bought; his job is to see that the requirements are fulfilled. These requirements are most frequently expressed by engineering and operating executives, in terms of basic specifications. bills of material, and requisitions. It is axiomatic in a competitive economy that comparable goods can be procured from various sources, or can be built to meet specifications by two or more competitive suppliers, with varying advantages as to cost, value, service. and satisfaction. The substantial majority of large, well managed concerns require that alternative sources of supply be maintained on all items, as the assurance of supply and to keep competition alive. They require that and specification or requisition calling for a specific brand be qualified by the phrase "or equal". That's where purchasing really starts. And this determination of the supplier with whom an order is to be placed is an exceedingly

(Please turn to page 352)



## It's a good trickand you can do it!

Turning out identical products day after day—exactly alike in color, quality, performance and saleability—can be simple and economical with Sylphon Temperature Regulators.

In food, chemical, textile, leather and other process industries—where temperature must be accurately controlled at all times—these regulators are great favorites. Their simplicity, their rugged construction, their efficient, selfpowered operation all add up to dependable performance and all around user satisfaction.

There's a size and type best suited for your purpose. Why not let a Fulton Sylphon applications engineer study your operation and make recommendations? Bulletin TO-20, describing these regulators in detail, sent on request.







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der gly THE FULTON SYLPHON CO. KNOXVILLE 4. TENN.

FULTON SYLPHON Semperature Controls · Bellows Devices · Bellows Assemblies

Canadian Representatives, Darling Brothers, Montreal



## Accidents Are Ridiculous When You Can Prevent Them with SOL-SPEEDI-DRI

HUMILIATION

When floors become slick and dangerous, it's time to shout for Sol-Speedi-Dri. Sol-Speedi-Dri, the original, fast-working, efficient absorbent for all liquids, keeps floors clean and safe—without back-breaking labor or interruptions in production schedules.

One man can do all the work necessary with Sol-Speedi-Dri. On the floor, Sol-Speedi-Dri is a carpet of safety that cuts down on accidents caused by slips and falls. When it is swept up, Sol-Speedi-Dri leaves floors as clean as Monday's wash.

Safety and Maintenance Co., Inc., No. 1 Wall Street, New York 5, N. Y.



#### Case Study in Education

(Continued from page 350)

important factor to the welfare and profits of the company, and to the success of the marketers seeking the business.

There is a tremendous amount of practical, up-to-date, and authoritative information about industrial purchasing. Much of it has never been used in the regular courses on purchasing, and it is even more remote from the incidental teaching of purchasing that occurs in marketing and management courses. It is my contention that the fault and the responsibility for this lies with the purchasing men themselves. My personal "crusade" has the objective of making this information available and putting it to work in business education through the channel of the Committee set up by the Association for the purpose. Meanwhile, any and all of the actual facts developed by this organization are at your service and at the service of the Committee for a more tactful and resultful presentation.

#### How to Buy Porcelain Enameled Steel

(Continued from page 96)

the stones or other natural finishes which they generally resemble, can be had. By the use of multiple coats and stencils, mural and other decorative effects may be produced. The famous mural in the Union Terminal at Cleveland, Ohio, is Seaporcel porcelain enameled metal.

#### Tests

Standard tests for acid resistance, reflectance, abrasion, impact, and torsion are available at the Porcelain Enamel Institute Inc., Washington, D. C. Many of these were worked out in conjunction with the National Bureau of Standards.

The practical application of any such test depends upon the service for which the enameled product is intended. Therefore a thorough discussion of the purpose of the product and of the test should be had with the porcelain enameling contractor to whose work the test is to be applied.

## DOUGLAS FIR PLYWOOD COMMERCIAL STANDARD

Douglas Fir Plywood, Commercial Standard 45-47, effective date, September 15, 1947, is announced by the Commodity Standards Division, National Bureau of Standards, Washington, D. C.

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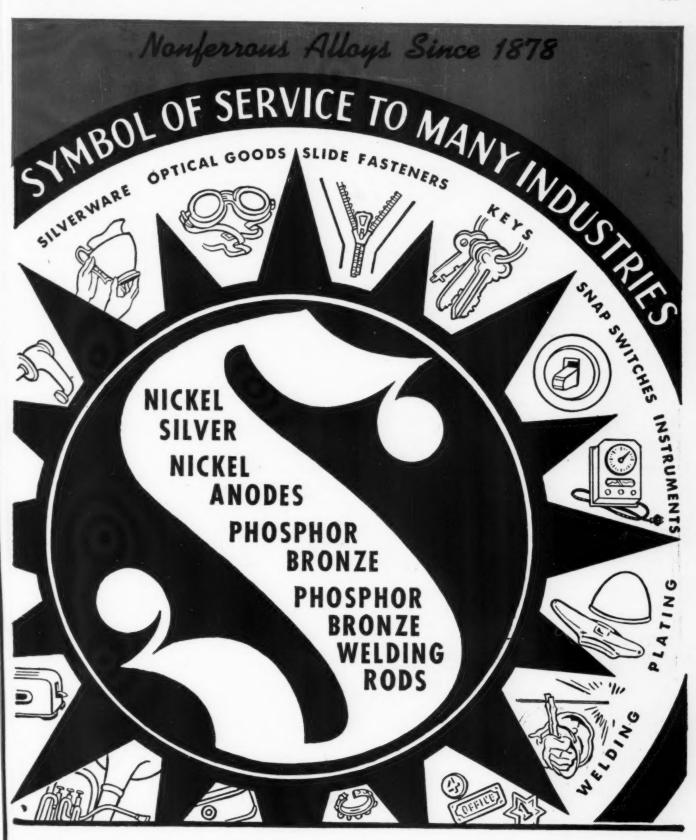
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THE SEYMOUR MANUFACTURING COMPANY, SEYMOUR, CONN., U.S.A.

FEYMILLR



## IF YOU WANT AN IMPROVED MICRO-FINISH

F you have any finishing operations on tools, dies, gauges, molds, rolls, precision parts where you'd like to get not only better results, but consistently duplicated results, you'll find this bulletin eminently worth studying.

It shows you how Magnus has put all types of mirror-finishing on a new high level of quality, dependable production and precision planning, plus immeasurably easier training of new operatives.

Magnus Chemical Company, 93 South Ave., Garwood, N. J. In Canada — Magnus Chemicals, Ltd., 4040 Rue Masson, Montreal 36. Que.

## See What Color Does to Improve Results

You will find the unique system of color identification used for the various grades of diamond pastes and sticks in the Magnus Superfinishing Kits to be particularly interesting.





ience. Get our latest literature.

THE HALSEY W. TAYLOR CO., WARREN, OHIO

The Purchasing Function in Advertising

(Continued from page 111)

pany in extra man hours, compare it to any extra savings gained, and then see who is the ultimate winner —Advertising or Purchasing.

The Advertising Man and the Purchasing Man should assist one another, it is easier for both. To the Buyer the Advertising Production Man should freely offer his vast fund of technical knowledge about paper, printing, art, type, etc. He should purposefully shy away from asserting his prerogatives on matters of price, sources and delivery. If he does insist upon getting his way in these latter functions, it costs his company money.

By the same token, the buyer should accept openly any technical advice from his friend in Advertising. Specifications should reflect the Ad Man's specialized knowledge and particular requirements. Any deviation, however innocent it may appear, could ruin a carefully calculated effect. Delivery dates are all-important, because the Advertising Department operates a production line, just the same as any manufacturing unit. Components must flow in on schedule, else the whole effort is lost. Advertising materials that arrive too late to back up a sales campaign make money for no one but the printer. The buyer who services an Advertising Department, then, should procure for the Ad Production Man the kind of materials and services that are required, and he should get them there on time. But he should perform these services according to his own best judgment as a qualified buyer.

Putting out advertising materials is a two-man function. A smooth production job needs a smooth team, each member pulling his own weight, both pulling together.

1 1 1
THIRD EDITION OF "LESSONS
IN ARC WELDING" ANNOUNCED

"Lessons in Arc Welding", third edition,, is announced by The Lincoln Electric Company, Cleveland, Ohio. The edition has been so completely revised that it amounts to almost an entirely new book. It includes 58 lessons and has 228 photographs, illustrations and drawings to supplement the text. The last thirty pages constitutes a "Questions and Answers" section. The book has 158 pages,  $5\frac{1}{2} \times 8\frac{1}{2}$ ", semi-flexible simulated leather cover. The price is  $50 \not$  per copy, postage prepaid, in the United States, elsewhere  $75 \not$  per copy.

# "Come Hell or High Water..."





### WISSCO BELTS ARE BUILT TO TAKE IT

Whether your processing operations require conveyor belts that stand up against the terrific heat of annealing or brazing furnaces, or under the punishment of chemical or wet processing, a Wissco Metal Conveyor Belt will do the job efficiently and economically.

The open mesh construction of Wissco Belts permits even heat distribution—makes them the accepted standard for heat treatment of metals, glass and ceramic ware and for baking and dehydrating of foods. Open mesh also permits the free drainage necessary for degreasing, quenching, washing, blanching or frying.

Each Wissco Belt has in it all the skill and experience of America's oldest producer. For 50 years Wickwire has pioneered in belt development and design. Wissco engineers are constantly solving problems for manufacturers—creating "tailor-made" belts to give long service under corrosion, abrasion and other destructive forces.

If you have a conveyor belt problem, we will be happy to cooperate in its solution. Send for our illustrated catalog showing types and advantages of numerous conveyor belt constructions.

WISSCO

METAL CONVEYOR BELTS

A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL AND IRON CORPORATION

Belt Sales Office and Plant—56 Sterling St., Clinton, Mass.

• Executive Office—500 Fifth Avenue, New York 18, N. Y. Sales Offices—Boston, Buffalo, Chattanooga, Chicago, Denver. Pacific Coast—The California Wire Cloth Corp., Oakland 6, Calif.



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#### SOLD AT REGULAR MARKET PRICES

Udylite carries one of the largest stocks of plating and finishing supplies in the country—ready for immediate shipment—sold at regular market prices.

And, every item in the stock has been tested for quality in Udylite laboratories. Only materials which meet our rigid specifications are accepted in our warehouse.

Without paying any more for his supplies, the Udylite user obtains the benefit of expert, experienced laboratory control of quality. He is assured that what he buys at Udylite will be the best obtainable—exactly meeting specifications. This is a Udylite extra service well worth having.

2765

**Aldylite** 

THE
UDYLITE CORPORATION
DETROIT II, MICHIGAN
REPRESENTED IN PRINCIPAL CITIES

#### How We Fare Under Fair Trade

(Continued from page 113)

the effect is to restrain trade. It is also unfair in the doll industry to entice employees away from one firm to another with the purpose of harming the firm which has been raided.

One of the rules for the vertical turbine pump industry stipulates that it is an unfair trade practice to sell or offer for sale industry products at prices purported to be reduced from what are in fact fictitious prices; or to sell or offer for sale such products at a purported reduction in price when such purported reduction is in fact fictitious or is otherwise misleading or deceptive.

Some of the industries recently covered by trade rules are the wholesale confectionery industry in the Philadelphia trade area, the saw and blade service industry, the piston ring industry, the construction equipment distributing industry and the artificial limb industry.

#### NIGP Reports Year of Achievement

(Continued from page 128)

tions is your reports. You may write only annual reports—or are they issued more frequently? Do you make the most of them?

"What I am urging is not that you just toot your own horn. I am urging that you get vocal about your work. Tell people about it. Tell it in reports, but if you cannot, then tell it in letters. Tell it in conferences. But tell it. There is need for the information that you have at your fingertips and you will find that it will be well received.

"Let us not forget that we are working in the field of public relations every time we conduct a transaction. Each purchasing agent is a spokesman for his whole profession. The NIGP will always stand in the forefront of efforts to interpret the public purchasing agent to the entire community. But each of us has to do his share, too."

#### Broaden 95% Discount Field

John R. Campbell, Director, Priority Claimants Division, WAA, stated that a discount of 95% has now been extended to about 78% of the remaining personal surplus (Please turn to page 358) Pr ho ou

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# NOW YOU CAN K

The Radically New, 100% Improved

**HF-100 FLUORESCENT FIXTURE** 







The exclusive hard baked white Miracoat finish assures unequalled reflection factors—not less than 86%! The two-lamp reflector has a pair of knockouts which are removable to provide for a third lamp if desired.

Easiest to Install! Hook slots in sides of tophousing for chain hanging make the HF-100 a cinch to install. Practically full-length channeling along both sides of tophousing for mounting with Slide-Grip Hangers. Eight knockouts make it easy for stem mounting.

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or,

of lus Easiest to Maintain! Not necessary to remove a single nut or screw to change starters or lamps! Reflector demountable by a twist of the wrist! That's the kind of industrial fluorescent fixture you want to handle. Complete with two 40-watt Sylvania Fluorescent Lamps. Act now!

# LOOK AT THESE EXCLUSIVE NEW PLUS FEATURES!

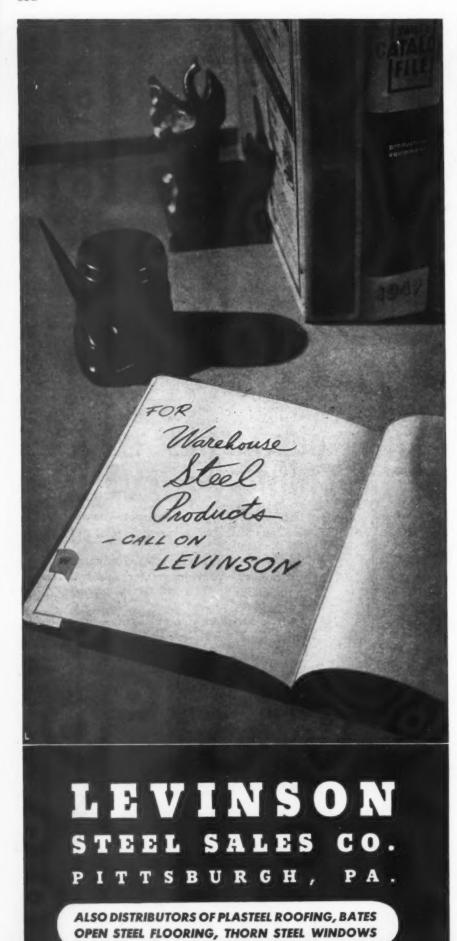
- 1 There's not a single welded spot no weak points that may pull apart or rust.
- 2 Turned down lip on reflector eliminates possible dirt catcher provides greater rigidity . . . easier to maintain.
- 3 Truly a one-piece design chassis no need for nuts, bolts, screws or welds to hold chassis together.
- 4. No welded internal cross bracing—no sharp edges in wiring channel to cause short circuits.
- No hanging "ears" smooth top easier than ever to clean.
- 6 Wire hook supplied with each chassis attaches directly to chain "S" hook no longer required.
- Wide web adds greater strength to already rugged "truss" construction.

Sylvania Electric Products Inc., 500 Fifth Ave., New York 18, N. Y.

OBTAINED THROUGH YOUR SYLVANIA DISTRIBUTOR

SYLVANIA ELECTRIC

MAKERS OF FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES



#### **NIGP** Reports Year of Achievement

(Continued from page 356)

property on purchases by agencies for health and educational branches governments. Furthermore, WAA policies are now being shaped for announcement of an extended warehouse deactivation program under which items scheduled for "emergency clearance" from surplus warehouses will also be offered to governmental buyers at 95% dis-

Arthur G. Eaton, Assistant Director, priority claimants division, also addressed the meeting. He spoke of a new ruling by the Federal Works Administration which makes it possible to apply a superior priority "above anything" to materials needed in cases of distress and emergency. Contacts in such cases, he said should be made with the FWA.

So far as the machine tool program is concerned, he said that hundreds of millions of dollars worth of machine tools were being passed out. He pointed out that the army and navy are tagging tremendous quantities of machine tools, stating that governmental purchasing agents should act quickly in event they are in need of various

types of machine tools.

Harry McArdle, Director of Surplus Property Procurement, Department of Purchase of the City of New York, stated that his department had found it advantageous to use the WAA purchase form instead of a purchase order. Mr. McArdle suggested that WAA create a setaside plan on war surplus office equipment and furniture for state and local governments that do not benefit under Public Law 697, which benefits educational institu-

#### Industrial Decentralization

Don G. Mitchell, president, Sylvania Electric Products, was the principal speaker at the Tuesday luncheon meeting. His talk on "Decentralization Helps Big Business Meet Its Social Obligations' appears in this issue.

Speakers at the Tuesday afternoon session were William L. Pfeiffer, Deputy Comptroller, State of New York, Albany, N. Y., subject, "The Money You Spend-Origins and Characteristics of Tax Funds"; Robert C. Shook, vice president, International Statistical Bureau, Inc., New York, subject, "Economic Trends as they Affect Governmental Buyers"; and Paul

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five bas phi tion spe L. Burroughs, purchasing agent,
 Pennsylvania Hospital, Philadelphia,
 who spoke on "Institutional Buying
 Specialized Problems of Purchas-

ing for Institutions.'

Mr. Shook stated that business factors which exerted an expansionist force in 1946 and 1945 are declining, stating that with few exceptions there are no longer any important shortages of supply. He expressed the thought that the country may be on the verge of a downward readjustment of business activity.

#### Institutional Buying

Paul L. Burroughs, Purchasing Agent. Pennsylvania Hospital, Philadelphia, Pa., in a paper on "Institutional Buying", stated that the hospital purchasing agent is of necessity concerned with the needs of every member of a "house of a hundred skills"—the hospital personnel, that there are many different types of personalities, and frequently their interests clash through lack of understanding. It is the responsibility of the purchasing agent, he said, to try to find the common ground in the determination of the basic need for materials, supplies and equipment. He must do this by cooperation with all clashing interests within the hospital. At the same time he must understand fully the economic necessity for businesslike methods in purchasing to the end that the best interests of the patient and hospital are served.

Mr. Burroughs stated that purchasing had not yet reached its full stature in the field of hospital administration. "There is still a great reluctance on the part of many hospital boards, administrators, superintendents and medical directors", he continued, "to completely recognize the purchasing function and give the necessary authority to a

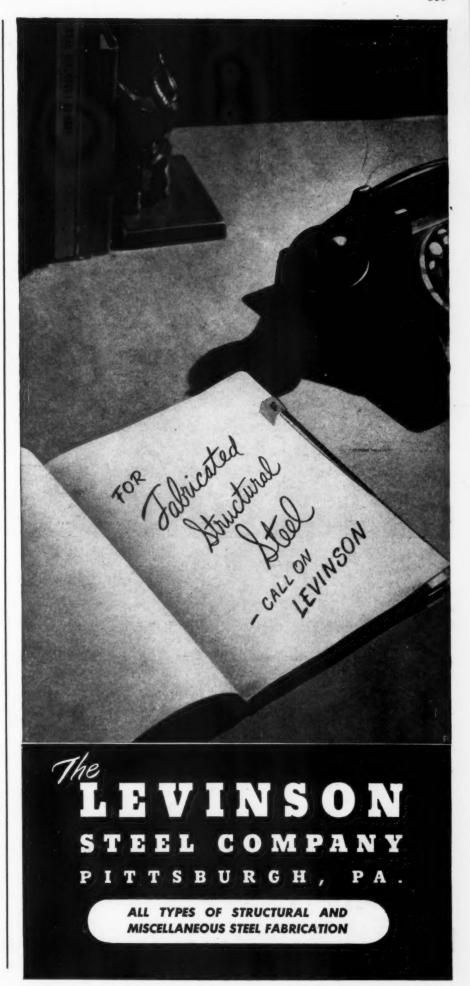
purchasing agent.

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"The real and only solution to this problem lies in the proper education of all concerned. Of first importance in this teaching program is the purchasing agent himself. The American Hospital Association has recognized that training and education are important to the administration of hospitals. Presently we are conducting three purchasing institutes each year in various parts of the country.

"These institutes are very intense five-day sessions which cover the basic principles of purchasing, the philosophy of the purchasing function even down to and including the special problems involved in the

(Please turn to page 362)





## "Help the P. A. Appraise Your Product..."

• "In our calls upon the Purchasing Agent, the interests of his firm and ours meet. Upon their dovetailing depends the amount of business transacted between us," says Mr. Turner.

"His appraisal of our ability to supply his needs depends upon our giving complete information about our materials, tools and service, and keeping him posted as to improvements and new developments."

Any sales manager will tell you that the primary

place to deposit product information is with the P. A., if you want to collect steady "interest" in sales. That's why PURCHASING heads the list on so many well-balanced advertising schedules. It is the sure way to get "printed selling" to the Purchasing Agent. It is the P. A.'s own book, the one he never misses.

Ask your own Purchasing Agent about it, or write PURCHASING, 205 E. 42nd St., New York 17, N. Y. Offices in Chicago, Cleveland, Los Angeles.





A CONOVER-MAST

THE NATIONAL MAGAZINE FOR PURCHASING EXECUTIVES

## "Front Door Business..."

The soundest and most fundamental principle in selling to industry today lies in selling through the "front door" — through the office of the Purchasing Agent.

Most successful Sales Managers like Mr. Turner knows this, but just to make sure that every one of America's Sales Executives know it — and that nobody forgets it — the publishers of your magazine "Purchasing" run advertisements like the one opposite, in the key marketing magazines of the country.

These advertisements cover more than 40,000 men responsible for the sales and advertising of Industry's leading manufacturers.







#### **NIGP** Reports Year of Achievement

(Continued from page 359)

purchase of specific items.

'We are trying to teach the present and incoming hospital purchasing agents that in the final analysis, cooperation is the keynote to the purchasing agent's value to his institution. We are trying to teach them that they are equal in status to any department head within the hospital. We want them to know that their work will mean a tremendous saving of time for other department heads who are already overworked.

"The next problem to take up is the fact that fundamentally there are very few hospital purchasing agents who purchase in large volume. We all are essentially small buyers of many items. While hospital inventories may vary from as few as 500 to as many as 5,000 items, we are subjected to the purchase of some 30,000 items.

"If the hospital purchasing agent proves that he is willing and able to cooperate with all department heads in the hospital, they in turn will provide real specifications for the things they want, and they will have faith in the purchasing department and the man who runs it.

"In our function as hospital purchasing agents we cannot presume to know more about the equipment used by the medical and nursing staffs in a hospital but, since we have access to their information, we can presume to know the purchasing procedure and the negotiation which

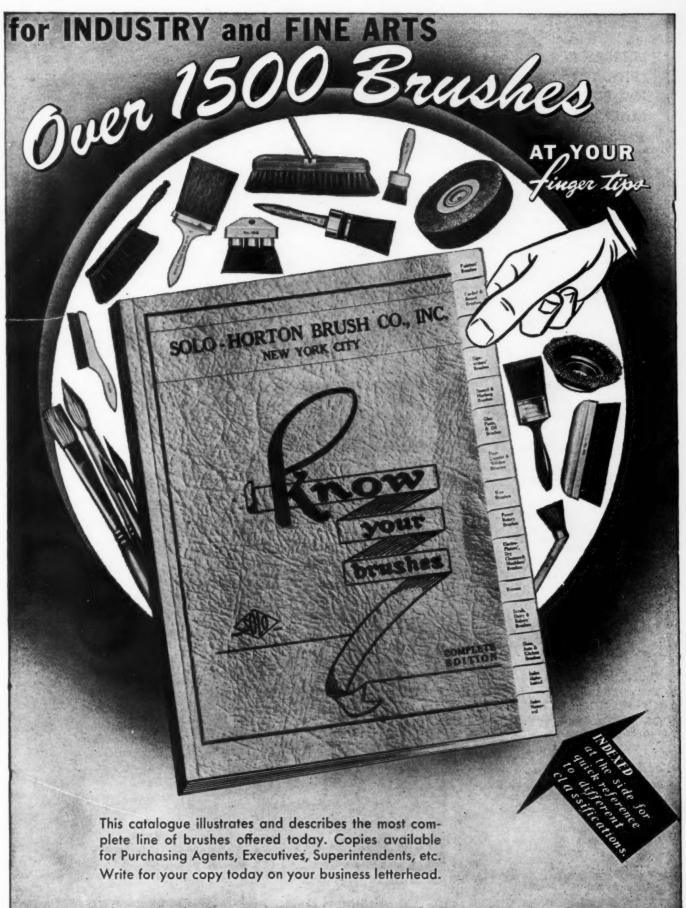
leads to actual buving.

'The answer to the problem of the adoption of standards and simplified practice recommendations is found in the creation of a standards committee within the hospital. This committee should be made up of the chief of each branch of medicine and surgery represented as well as the administrator, the director of nursing and the purchasing agent. Their function is to meet as often as is necessary to promulgate standards for medical and surgical materials and supplies to be used by the entire hospital organization. By this method everyone having to do with these standards is given a voice."

#### Purchasing for United Nations

Frederick Mapes, director of the purchase and supply division of the United Nations, Lake Success, Long Island, addressed the meeting on "Purchasing for the United Nations", Wednesday morning. His

(Please turn to page 364)



THE SOLO-HORTON BRUSH CO., INC.

135 WEST 19TH STREET . Dept. A-1 . NEW YORK 11, N. Y.

# FIGURES FOR EVERY MARKING PURPOSE

# "SAFETY" HEAVY BEVEL STAMPS

Here are the most widely known and most practical stamps for all marking purposes. Made of MECCO alloy steels which eliminate dangerous spalling, mushrooming—in character sizes from 1/32" up. Impressions are deep and clear cut.



- NO SPALLING
- NO MUSHROOMING
- 25% TO 50% MORE SERVICE
- LESS FATIGUE



WRITE FOR LITERATURE



154 E. CARSON STREET

PITTSBURGH 19, PA.



PROTECTION — Protects against abrasion, acids, alkalies, chemicals, corrosives, stains, salt-water, slime and irritants.

**DEXTERITY** — Special curvature designed to fit natural hand contours.

LONG LIFE—Vulcanized and reinforced for superior wear.

COMFORT—Lined with fleecy Canton cotton flannel. Hands stay clean, safe and dry.

TWO TYPES—Specify "Knitwrist" for hand protection; "Gauntlet" for hand and lower arm protection. Order Hood Work Gloves from your jobber—by dozen or case today. Since 1934—America's SAFETY-PLUS Glove.

- 11000

HOOD RUBBER CO., WATERTOWN, MASS. A Division of the B. F. Goodrich Company



# NIGP Reports Year of Achievement

(Continued from page 362) address appears elsewhere in this issue.

#### The NIGP Survey Report

Feature of the Wednesday session was the presentation of "Public Purchasing Practices and Procedures. A report on a National Survey by NIGP, presenting facts never before collected" by David Joseph, special survey director and certified public accountant of New York.

The report was based on 235 replies to a questionnaire sent by the association's survey committee to county, city, state and school and educational purchasing agents. Questions involved such subjects as nomenclature, practices and procedures, handling of bids, advertising, making awards, bid deposits, inspection and testing, tie bids, discounts, payments and other phases of governmental procurement.

The survey revealed wide variations in practices and procedures by public purchasing agents, evolved through a multitude of influences such as differing governmental structures, local and historical backgrounds, volume of goods and services purchased, lawmakers, local and state

Despite these varying influences, the survey revealed that many fundamental public purchasing practices are singularly similar, or parallel, "proving the essential agreement of public purchasing men on the basic elements of sound practice.

The presentation of the report was followed by a panel discussion, with Joseph H. Crowley, Chief Counsel, Law Department, City of Cleveland, as chairman. The panel, or jury, consisted of the following: Harold deWyk, City Purchasing Agent, Dearborn, Mich,; C. I. Smith, City Purchasing Agent, Phoenix, Ariz.; William Collins, Director of Purchases, Board Mich.: Education, Detroit, Arthur B. Gathright, Director of the Division of Purchase and Printing. Commonwealth of Virginia, Richmond, Va.; Ward Alexander, City Purchasing Agent, Schenectady, N. Y.; Herman E. Bowers, Assistant Director of Public Works and Supply, State of Indiana, Indianapolis, Ind.: Charles H. Grakelow, Director, Department of Supplies and Purchases, City of Philadelphia; Maurice S. Park, County Purchasing Agent, Dane County,

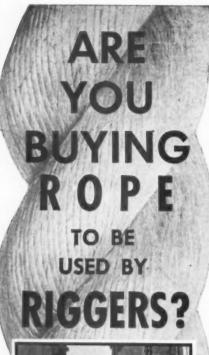
(Please turn to page 366)

# Tools that meet every requirement

Herbrand tools meet every requirement of the jobs for which they are built . . . accurate fit, functional design, fine balance and rugged durability. They are made to outlast ordinary tools through the use of finer materials and precision manufacture. This superior quality assures a reserve strength that comes in handy for super-tough jobs.

All Herbrand tools now available are of the same top quality that has made their name a by-word among skilled mechanics for over 65 years. *Good* mechanics know and appreciate *good* tools—and, of course, demand Herbrand. Ask your Herbrand jobber, or write us for complete details on this line of superior quality tools.







# THEY NEED

The righer, whose life depends on the lives that support his scaffolding, deserves the best in strong, nonkinking, long-life rope.

For rigging, Whitlock Waterflex is outstanding. It is thoroughly lubricated and waterproofed, and scientifically laid. For safety and endurance, buy Whitlock Rope for your riggers, painters, and plant maintenance men.



WHITLOCK CORDAGE
COMPANY
AS SOUTH STREET - NEW YORK 5, N.Y.

### NIGP Reports Year of Achievement

(Continued from page 364)

Madison, Wis.; and Hans Spann, Administrative Assistant, Bureau of Supplies, Board of Education, New York City.

The members of the panel gave voice to their opinion regarding various phases of the report. Summing up their comment, Chairman Crowley reported that the survey marked an excellent start in tabulating various practices, and that the many answers should lead to new questions, that uniformity of laws was a goal to strive for; that the purchasing department is quite definitely the department to make inspection, for the purchasing agent must know what the results are so that he can judge future bids and responsibility of buyers; that all deliveries should be sent to a central receiving point; that the use of standardized forms should be striven for; and there is no confusion made to procure standard laws on governmental purchasing.

Mr. Crowley stated that the survey indicated that it has a distinct value; that the value of any survey is in its continuity, and therefore this survey ought to be carried for-

ward.

#### G. E. LAMP DEPARTMENT ENDS NELA SPECIALTY DIVISION

The Lamp Department of the General Electric Company has discontinued its Nela Specialty Division, 1 Newark Street, Hoboken, N. J.

Its sales personnel have been transferred to other Lamp Department sales districts. The sale of G-E glow lamps and sodium lamps, which the Nela Specialty Division has handled in the past, will be handled in the future by other Lamp Department sales districts throughout the country, according to P. D. Parker, manager of the Lamp Department's General Sales Division, Nela Park, Cleveland, Ohio.

Other miscellaneous products formerly sold by the Nela Specialty Division will be sold nationally by the Lamp Department's Atlantic Sales District, 570 Lexington Avenue, New York.

Charles F. Strebig, manager of the Nela Specialty Division since it was formed in 1939, will be transferred to the Lamp Department's headquarters, Nela Park, Cleveland. H. R. Walker of the Nela Specialty Division will be transferred to the Atlantic Sales District and W. W. Becky to the Midland Sales District, Chicago. They will act as advisors to the Lamp Department's 19 sales districts in handling the business formerly handled by the Nela Specialty Division.



Accurate Threads for speedy assembly.

True to Size assuring perfect fit.

Scientifically Produced assuring maximum strength.

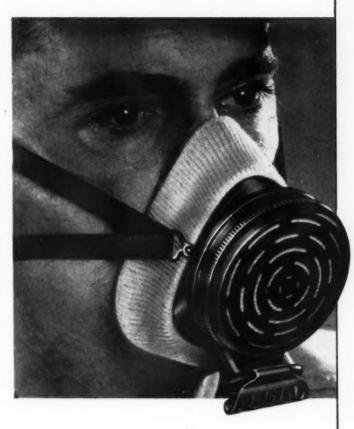
# CLARK

Bolts, Nuts, Screws and Rivets

are so produced with a Century of Experience behind them.

Specify and demand by name from your jobber or Mill Supply House.





First of its kind, the R-2000 RESPIRATOR features a chemically\* treated felt filter of approximately five inches which does the work of previous filters eight times as large in area—and protects workers from poisonous dusts as small as 24 millionths of an inch diameter! This new and important development safeguards against a combination of all dusts—toxic, nuisance and pneumoconiosis-producing, while providing increased front and side vision due to reduced size of the filter container.

The advance in filtering efficiency is without any increase in low breathing resistance and the compact overall size of the respirator offers a new high in



OF AN INCH IN DIAMETER

wearer comfort. For added economy, the disposable filter is equipped with a gauze pre-filter which extends filter life by preventing the passage of larger particles of dust and dirt. A special lightweight easy-to-attach face shield is available for use with the respirator. This shield protects eyes and upper face against impact of foreign particles. Approved by the Bureau of Mines.

\*Provides 40 to 1 greater efficiency over untreated filters.

Safety



# This is how STROM BALLS are born



The steel is carefully chosen and inspected, even before it gets to the heading machine. After being "born" here, balls are carefully "brought up," through a long series of grinding and lapping operations, to the unbelievably high standards of finish, sphericity and precision which have made Strom Metal Balls the standard of Industry. Strom Steel Ball Co., 1850 South 54th Avenue, Cicero 50, Illinois.



Largest Independent and Exclusive Metal Ball Manufacturer

# LINK-BELT ANNOUNCES SALES MANAGEMENT CHANGES

The following changes in sales management personnel have been announced by the Link-Belt Co., Chicago, Ill.:

James B. Elliott, heretofore divisional manager for Caldwell plant products, with headquarters at the Caldwell plant in Chicago, has been appointed divisional sales manager at the company's plant in Minneapolis, Minn.

Erwin A. Wendell, formerly district sales manager, Chicago branch, with headquarters at the Pershing Road plant, has been appointed divisional sales manager for Caldwell plant products.

T. W. Matchett, formerly district sales engineer at New York, has been appointed district sales manager, Chicago branch, with headquarters at the Pershing Road plant.

### W. A. A. NAMES GOING TO ZONE III POST

The appointment of R. F. Going, of Chicago, to serve as associate administrator of War Assets Administration Zone III was announced recently by Hamilton Morton, Zone Administrator. Going will supervise the WAA war surplus disposal program of almost two billion dollar inventory value in six regional offices, Chicago, Detroit, Cleveland, Cincinnati, Louisville and Minneapolis.



# COULOMB FIRST to establish major laws in electrostatics

Charles Augustin Coulomb (1736-1806) Coulomb, a French military engineer engaged in research, invented the torsion balance with which he measured the forces of attraction and repulsion of electrically charged balls and of steel magnets, from which he established laws of electrostatics and magnetism. Today, the unit of electrical quantity bears his name.



from an Original Drawing made for OHMITE

# OHMITE

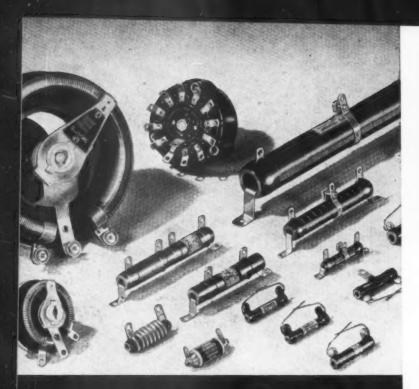


# FIRST in Wire-Wound Resistors...today

Ohmite offers the most complete line of wire-wound resistors on the market today. These Ohmite resistors have become known for their dependability...their unfailing performance under adverse operating conditions. For extra dependability...specify Ohmite resistorsindustry's first choice.

Be Right with OHMITE

RHEOSTATS . RESISTORS . TAP SWITCHES



# **Ohmite Rheostats**

Resistors, Tap Switches

# **Available From Stock**

at your Ohmite Distributor

You can get immediate delivery on reasonable quantities of Ohmite products...rheoetats, resistors, tap switches, and other items...from your local Ohmite distributor. He carries a complete stock of standard Ohmite items. Call on him when you need moderate quantities for experimental work or small production runs. He is organized to give the industrial user prompt delivery on all items listed in the Ohmite Stock Catalog No. 19.

Write for the name and address of the Ohmite distributor that serves your territory. It will pay you to become acquainted with him.

### OHMITE MANUFACTURING CO.

4902 Flournoy Street, Chicago 44, Illinois

# FIVE NEW OHMITE ITEMS



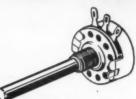
# ± 5% Tolerance Composition Resistors

Now, "Little Devil" resistors in ½ and 1-watt sizes in ±5% tolerance. Also ½, 1, and 2-watt sizes in ±10%. Available only through Ohmite distributors.



#### 5-Watt Wire-Wound Resistors

Rugged, vitreous-enameled "Brown Devil" resistors in a compact, 5-watt size. Values from 1 to 10,000 ohms. Tolerance ±10%.



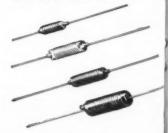
# 2-Watt, Molded CompositionPotentiometer

Now—a 2-watt unit with a good margin of safety for industrial use. Withstands heat, cold, moisture, and severe service. Sold only through Ohmite distributors.



# RB-2 Direction Indicator Potentiometer

A compact, low-cost unit used with a 6-volt battery and ordinary 0-1 milliammeter to indicate, remotely, the position of a rotary-beam antenna or other device.

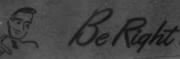


#### High-Frequency Plate Chokes

Single-layer wound on lowpower factor bakelite cores. Moisture-proof coating. Four stock sizes, 50 mc. to 460 mc. Rated 1000 ma.



Write For Stock Unit Catalog No. 19





Industry's Tirst Choice



gears for industry. Vast plant facilities of the most modern gear cutting equipment assure capa-

ble handling of your production or special gear requirements.

**HELICAL and BEVEL GEARS**—From 1" to 60'' in diameter and from 24 DP to  $1\frac{1}{2}$  DP.

SPUR GEARS—Size range from 3/4" to 150" in diameter. 32 DP to 3/4 DP.

HERRINGBONE GEARS—Made from 1" to 60" in diameter and from 10 DP to 11/2 DP.

SPIRAL BEVEL GEARS—Made from 1" to 30" in diam, and 24 DP to 11/2 DP.
WORM GEARS—Made from 1" to 100" in diam, and from 24 DP to 1 DP.

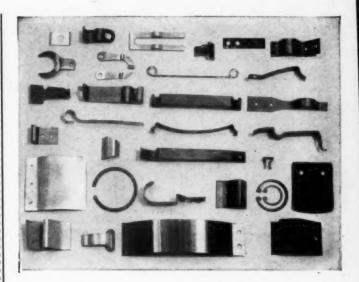


YOUR GEAR INQUIRIES WILL RECEIVE IMMEDIATE ATTENTION

D.O.JAMES MANUFACTURING COMPANY

1140 W. MONROE ST. • CHICAGO, ILL.





# A WAY TO CUT YOUR SPRING COSTS!

Wide variance in spring prices can easily arise from latitude in interpreting loose specifications, rather than from your producer's failure to know his own costs. Most spring

manufacturers are experts on costs. Price differentials on any given spring are often really the result of "cutting corners", which adversely affects the quality of your spring.

All industry is now likely to become more cost conscious. If you are "paying through the nose" for submitting to your spring sources inadequate, contradictory, or unclear specifications—do something about it! For if your price inquiries, specifications and prints are in workable shape at the outset, you always save money—and you should then get full value, full quality, for the price you pay. Reliable specializes in precision manufacturing of all types of springs, wire forms and light stampings—but we can do more for you with precise specifications.

As a guide on vital spring information, write for Bulletin, "Buying the Right Springs Right".

The Reliable Spring & Wire Forms Co.
3167 Fulton Rd., Cleveland 9, Ohio

Representatives in Principal Cities





# DON'T CONTRIBUTE TO LOWER COSTS

It may be wise for you to analyze carefully the spring requirements of your products to make sure you are not wasting money through "Luxury" specifications. Possibly, through habit, you are using the same springs for one product that you use for another because they "operate successfully." Or your product's present design doesn't demand the same "fussy" springs the old design called for. You may be using ground end springs, for example, when they are unnecessary, or you may specify tolerances to plus or minus 2 or 3% when even a 10% tolerance would be sufficient for the job to be done.

Unnecessary specifications add to the cost of springs—and to the unit cost of products. Many times, product design can be altered ever so slightly to take advantage of a more economical and equivalent spring.

All these things are quickly recognized by Lewis Spring engineers. They are experienced in all phases of spring design, production and applicability to products. Lewis has saved manufacturers thousands of dollars by recommending and supplying the most practical and economical springs for the job.

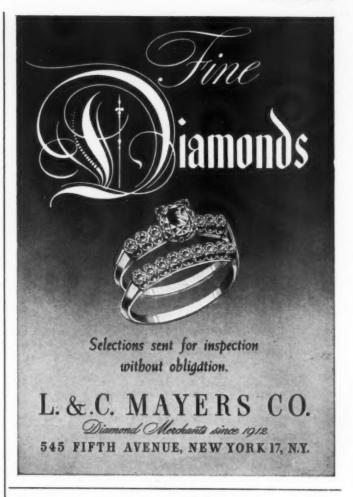
There is a Lewis representative near you ready to help solve your spring or wireform problems. We shall be glad to send him to see you, with no obligation, of course. Wire or write us.

LEWIS SPRING & MFG. CO.

2648 NORTH AVENUE, CHICAGO 47

PRECISION

THE FINEST LIGHT SPRINGS AND WIREFORMS
OF EVERY TYPE AND MATERIAL



Design Engineers Specify

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### Because -

- They offer more flexibility in power planning.
- They are built to meet unusual power loads and high temperatures.
- They meet all operating conditions where hazards of liquids, chips, etc., dropping into the motor are involved; as well as splash conditions.
- Being made in ½ to 75
   h. p. sizes, they offer wide adaptability.





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Men probably never give work clothes a mauling like this, but "U. S." garments could stand it. Yet thanks to superior rubber engineering, they're light, comfortable, easy-fitting. They're cut so a man can twist, bend, stretch, kneel. Coats set true at neck and shoulders. Rubber coating compounds, specially made for the job withstand heat, sun, snags, bending, folding, rubbing. Long-wearing "U. S." work clothes stay waterproof.



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"Blue Devil" Socket Screw Products are known throughout industry as the finest quality obtainable. BEST because of their outstanding performance records and their 6 POINTS OF SUPERIORITY -the reasons why they are the favorite of modern industry:

- PRECISION MADE-threads are an accurate class 3 fit.
- SPECIAL ALLOY STEEL for toughness, dura-2.
- MADE BY SPECIALISTS in socket screw manu-3.
- SCIENTIFICALLY HEAT TREATED to insure, a clean, uniform structure.
- QUALITY AT ITS BEST-high manufacturing
- WIDE SELECTION of stock sizes and styles: 6.

Socket Set Screws Socket Head Cap Screws Socket Head Stripper Bolts Socket Screws-Dardelet Socket Screw Keys Socket Pipe Plugs





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Please send Free Catalog listing styles, sizes, prices and specifications of "Blue Devil" products.

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Attention	Title

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For example, are you putting PURCHASING to work obtaining free charts, manuals, catalogs, booklets, and bulletins describing the latest equipment and materials that will improve your plant's operations and product?

For the best of the month's offerings, see page 14 of this issue. Check off what you want on the business reply card at the bottom of page 19, mail to us.

When we asked a cross section of PURCHASING readers to rate the articles and features of a typical issue in order of their importance, the Free Informative Literature Section proved to be well in the first

Your catalog file will always be up to date if you cultivate the excellent habit of looking over the free literature offerings each month, and letting PURCHAS-ING obtain for you what you want.

# STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRC LATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of Purchasing, published monthly at Orange, Conn. for September 1947. State of New York

Sas.

Comty of New York

Before me, a Notary Public in and for the State and county aforesaid, personally appeared A. M. Morse, Jr., who, having been duly sworn according to law, deposes and says that he is the Business Manager of the magazine "Turchasing" and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537 Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher, Harvey Conover, — B. P. Mast, 205 East 42nd Street, New York City 17; Editor, Stuart Heinritz, 205 East 42nd Street, New York City 17; Business Manager, A. M. Morse, Jr., 205 E. 42nd Street, New York City 17.

2. That the owner is: (If owned by a corporation, its name and addresses must be stated and also immediately thereunder the names and addresses must be stated and also immediately thereunder the names and addresses must be stated and also immediately thereunder the names and addresses of the individual owners must be given. If owned by a fron, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given. If owned by a fron, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.

1. Dorothy J. Conover, 1251 Flagler Drive, Mamaroneck, N. Y.; Ruth S., No. Mischigan Ave., Chicago J., Ill.; Conover-Mast Corporation, 205 E. 42 St., New York City 17; A. M. Morse Jr., 304 Maphelbil Drive, Larchmont, N. Y.

Notary Public.
(My commission expires March 30, 1949.)

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... when the going is tough.

The difference between PERM-A-CLOR and other chlorinated vapor degreasing solvents is stability. PERM-A-CLOR remains stable—as a liquid and as a vapor—regardless of how many times it has been distilled.

Thus, the advantages of solvent-vapor degreasing—speed, economy, and efficiency—are available even to those who have the most difficult of metal-cleaning problems . . . die castings, white metals, aluminum.

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The simple, rugged forged parts are daily routine. Mixed in are the precision close tolerance jobs. They're all the same to Billings Forging Engineers—Production!

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That's PAGE headquarters.

During the many years we have been working with stainless, we have learned much about the applications of stainless steel wire in manufacture.

That's why we suggest that when you have a problem involving wire, it will pay you to...

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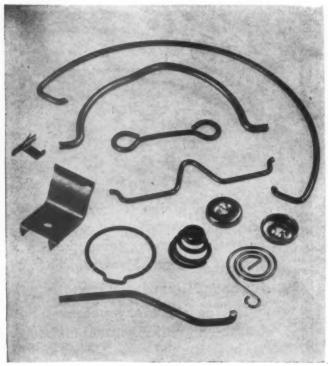
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PAGE STEEL AND WIRE DIVISION AMERICAN CHAIN & CABLE

Coil Spring Says...

I'm just waiting to work for the chance to work on your new spring design



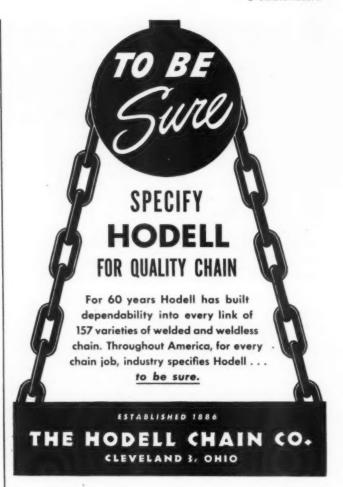


Planning a new product? Bear in mind that the facilities of our complete engineering and production staff are at your service—constantly devising methods of producing your new designs economically and helping your product to manufacturing success. When you get to springs, give us a call.

No order too large or too small.

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HERE'S an easy way for you to keep abreast of NEW developments in materials, equipment, finishes and processes:

Every month you will find listed in the "Ask Purch" Section — Pages 14 to 20, incl., from 75 to 100 new pieces of manufacturers' literature.

Make your selection of the literature of interest to you, and which you may need to bring your catalog files up to date.

And, check the numbers on the post-paid postcards on Pages 19 and 20. "Purch" will see that the material is sent to you without cost.

ask Purch

17:

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ALL PURPOSE TIME CONTROL DEVICE



# ...*the new*Multiple USE TYM-AN-DATER

A JOB TIMER

Labor starting and stopping time is accurately, legibly and unalterably recorded.

#### A TIME STAMP

In the hundreds of places where exact time of arrival, departure, etc. is a primary consideration, the Tym-an-Dater serves as an accurate time stamp.

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Wherever there are too few employees to warrant a larger time recorder, where space is at a premium, or where more than one function of time recording is desired, the Tym-an-Dater serves as an efficient attendance recorder.

Write for Catalog P.

THE CINCINNATI TIME RECORDER CO.

Specifies VACO
S/B (Slo-Burning)
Drivers



The VACO Reversible!

It's new! Pull out the blade, turn it around, and you have a Phillips instead of a regular driver. Only electrically heat treated chrome vanadium bits are used in Vaco screw drivers.



317 E. ONTARIO ST., CHICAGO, ILLINOIS Now Vaco offers you the new Amberyl Slo-Burning handle embossed with the Underwriters' Laboratories, Inc., Reexamination Service Marker. Ends forever the extreme fire hazard of old style nitro-cellulose handles! It will pay you to investigate this latest improvement in the full Vaco line of shock and break proof screw and nut drivers. Write for full information.

Make Friends with a VACO!



People can't resist the appeal of this useful little tool. It's an ideal give-away . . . inexpensive in promotion or premium lot quantities. Your name imprinted in gold, silver or other color on Amberyl handles.



Rubber and Duck

Garlock 777 Low Pressure Packing is constructed of plies of closely woven duck, bonded together with a special rubber compound and finished with top and bottom covers of heavy rubber. Recommended for hot or cold water and low pressure steam. For long dependable packing service, use Garlock 777.

Also for Ammonia — GARLOCK Rubber and Duck packing is also specially treated for ammonia service —specify GARLOCK 778 Spiral; GARLOCK 334 Rings.

THE GARLOCK PACKING COMPANY PALMYRA, N. Y.

In Canada: The Garlock Packing Company of Canada Ltd., Montreal, Que.

60th Anniversary 1887-1947



GARLOCK 777

#### INVENTORY CONTROL ARTICLE "MUST" READING

We certainly appreciate D. B. Henderson's article, "Sell Your Suppliers on Inventory Control," on page 92 of your August issue. It is an extremely important message for all purchasing agents to read.

It is our intention to have it photostatted and copies distributed to the purchasing agents at our various plants.

-Chas. S. Bygate, General Purchasing Agent Rockwell Manufacturing Company 400 North Lexington Avenue Pittsburgh 8, Pennsylvania

We can usually furnish three or four clippings of wanted articles and are always glad to do so without charge.—Ed.

#### FINE, THRIVING

I was delighted to read the article "The American Dollar At Work", in your Septem-

You state in your article, "Purchasing is proud to be included in this list of essential vendors." May we return the compliment by stating that we are very proud to read the story you published about us in your fine, thriving and progressive publication.

> -Richard J. Boylan, Vice President The American Tobacco Company 111 Fifth Avenue New York 3, N. Y.

### QUESTIONS FLUORESCENT DELIVERY TIME

In "Product Delivery Information" in your July issue, you have listed a delivery time of fluorescent units as immediate for standard products and thirty days on special order.

What is the source of your data?

Erving G. Bernstein, Sales Promotion Manager The Frink Corporation

Long Island City 1, New York

Source was an Eastern manufacturer of fluorescent units, Names of contributors to the monthly delivery timetable are not divulged, but your letter will be forwarded to this source if you wish .- Ed.

#### STEEL NO BETTER

With regard to your monthly delivery reports, we take exception to this statement, 'The steel picture is much better". We find the availability of practically all steel products, especially structural, sheets, strip, and plate just as critical as it ever has been. This also applies to carbon tube

rounds (round bars) from which we pierce our seamless tubing.

To supplement the delivery information which you publish each month, we are pleased to advise that on standard alloy products we are quoting 4 to 5 weeks on hot finished seamless tubing and 6 to 8 weeks on cold drawn seamless tubing. Your two months stipulation on stainless seamless and welded tubes sounds about right.

Some of our piercing mills are booked through the first quarter of next year, especially as related to carbon boiler tubing. On boiler tubes made on our other mills, we are quoting 3 to 4 months delivery.

We are appreciative of your monthly delivery reports on various commodities, and we hope the above information will prove to be helpful in making your reports as accurate as possible.

> -C. W. Spahr, Purchasing Agent The Babcock & Wilcox Tube Company Beaver Falls, Pennsylvania

Despite the fact that the monthly delivery timetable (see page 137) is based on the latest data obtained from reliable sources, its wide scope militates against absolute perfection. Mr. Spahr's correction is noted and appreciated, as will be letters from other readers leading to maximum accuracy in this popular feature.—Ed.

#### HOW INQUIRIES FOR NEW PRODUCTS ARE HANDLED

How do you handle the reference to our product in your publication?

> -L. T. Swallow, President Plywood Specialties Corp. Detroit 2, Michigan

News items about new products are published in the "New Products and Ideas" section (see page 152). These items include the name and address of the manufacturer.

News items about new bulletins and catalogs are published in the "Ask Purch" section (see pages 14, 16, 19, 20). Readers request the printed matter they are interested in by returning the postcard that appears on pages 19, 20. We turn these requests over to the manufacturer issuing the literature.

These sections are high in reader interest, for purchasing departments must keep abreast of new develop-ments and new sources of supply. PURCHASING readers necessarily are very selective. There are no curiosity inquiries, as purchasing executives have no time to give to printed matter about products of no concern to their companies.—Ed.

#### "PURCH" ADMIRER

Can a non-member of the N.A.P.A. obtain the famous "Handbook?"

May I express the admiration of a foreigner for the work "Purch" is doing and wish that we in Belgium could have an organization as yours.

> -R. H. De Naeyer Antwerp, Belgium

Distribution of the Handbook is limited to N.A.P.A. members, but even though you do not reside in the United States you may apply for membership in one of the local chapters. If you meet the chapter's qualifications, and are accepted, you will receive the Handbook.—Ed.

#### PURCHASING MANUAL IS AVAILABLE

Please send me a reprint of the representative purchasing department manual from the February issue of your magazine.

> -E. T. Taylor North Carolina Finishing Company Salisbury, North Carolina

Heavy demand necessitated reprinting the 8-page article in the February issue of PURCHASING which reproduced in full the purchasing manual used so successfully by the International Resistance Co., Philadelphia, in acquainting all departments with purchasing department functions, responsibilities, its obligations to other departments, and other departments' obligations to the purchasing department. Copies are still available.-Ed.

#### DOWN WITH MISREPRESENTA-TIONS OF THE PURCHASING FUNCTION

Please accept my sincere congratulations on "The XYZ of Purchasing," in your August issue. It completely covers a subject which has long been in need of close scrutiny and analysis. I particularly appreciated your diagnosis of the responsibility for existence of certain purchasing "fallacies" which are currently in print.

Speaking as an individual, it would appear that you have charted an excellent course for the educational committees to follow, and for which, I believe, they will be very

-E. E. Rumple, Manager Container Dept. Purchasing Division, Merck & Co., Rahway, N. J.

# When you need high quality cold-rolled steel for a special job ...

# √ check with SANDVIK

For twenty-six years Sandvik has been supplying quality cold-rolled steel to meet the high physical demands of a wide variety of special purposes.

The specialized abilities of Sandvik steel are a result of the materials and methods used in its production. High quality ore of extremely low phosphorous and sulfur content is smelted in small furnaces, using the purest metallurgical fuel - obtained from coniferous forests

The high grade pig iron thus produced is combined with equally pure scrap, and the steel is made by the acid open hearth process in small electric furnaces designed for accurate melting control.

After the steel is born, Sandvik's skill and experience carefully perform the many subsequent operations needed to make it ready for use.

If you need a cold-rolled, hardened and tempered, annealed or unannealed steel that has

> Uniform Hardness **Accurate Size** High Fatigue Life d Fine Surface

none or write Sandvik. Complete information and stock lists are yours for the asking.







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# CLASSIFIED SECTION

One Overhead Electric Traveling Crane, Shepard Niles. 3-ton capacity, cab operated, 44' 2½" span, three 220-volt D. C. motors.

#### LAFAYETTE STEEL COMPANY

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# IMMEDIATE SHIPMENT

ON NORTH AMERICAN COMBINATION GAS-OIL BURNERS, SERIES 113. TWENTY-TWO ON HAND Also have Sillimanite Blocks For These Burners. REDUCED PRICE

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### WEISS STEEL CO. INC.

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Buyers of Surplus Steel Inventories

#### FOR SALE

Ingersoil-Rand Type 10 Steam driven air compressor, Serial \*14821/2, steam cylinders 24\* and 14\* x 16\*, air cylinders 23\* and 13\* x 16\*, built for 1000 e.f.m. at 5000 ft. elevation, capacity at sea level 1300 c.f.m. at 100 lbs. Good working condition and presently in use. Available for release in 4 - 6 months. Reasonably priced.

BOX 1125 — c/o PURCHASING 205 E. 42nd St., New York 17, N. Y.

# Have You Tried Baron Steel Co.?

Steel in Warehouse Stock at Regular Warehouse Price.

BARS - PLATES - SHAPES -SASH - EXPANDED METAL -REINFORCING

Ask to be placed on our mailing list for large detailed stock list issued corrected every two weeks.

# BARON STEEL CO

4075 Detroit Ave. Toledo 12. Ohio

#### HELP WANTED

COAL BUYER for City of Detroit. Should know how to buy, store and burn fuel and be familiar with sources of supply. College traiing necessary; combustion experience advantageous. Minimum age: 27. Salary range:

Applications received by mail. For further information apply to Detroit Civil Service Commission, 735 Randolph Street, Detroit 26, Michigo ..

### FOR SALE

One #8D Saunders & Son pipe machine in first-class condition, complete with dies, etc. To cut and thread pipe from 4" I.D. to 14" O.D. Direct connected to 220 volt, 60 cycle, three phase motor.

HOWE & BASSETT CO. Rochester, N. Y

#### FOR SALE

Two Stainless Steel, York Ice Makers. Will make 200 lbs. of Ice in 22½ lb. Blocks per 24 hours. Small, well-designed and presentable. Ideal for Institutions, Large Homes, Restaurants, Tap Rooms, etc. Only limited quantity. Price Complete with Refrigeration Equipment: \$395.00 FOB Phila. A real buy! Pays for itself in six months. Refrigeration Engineering Corp. 2024 Market St., Phila. 3, Pa.

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# **NEW ENGLAND** PRESSED STEEL COMPANY

Contract Manufacturers since 1914

METAL STAMPINGS SPECIALTIES - APPLIANCES For Industrial and Domestic Users

NATICK

P. O. BOX 29 MASSACHUSETTS

#### FOR SALE

2-Type 4860-E. H. Linberg Vertical Type Cyclone Tempering Furnaces and necessary equipment. ERIE, PENNA.

GRISWOLD MFG. CO.

### FOR SALE

400 HP @ 150-lb. P WATTS-CAMPBELL ENGINE in excellent condition.

Just stopped after conversion to electricity.  $20\,\%$  bore, 48" stroke, 80 rpm, flywheel 14' x 38". Can be seen and run. Easily removed from foun-

### WILLIAM CRABB & CO.

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#### POSITIONS WANTED

VETERAN, 34, WANTS opportunity to prove ability. Experienced buying metals and materials, plastics, chemicals, machine components, castings, machine tools. Willing, able to take responsibility. Salary secondary. Will travel anywhere. Box 1134, PURCHASING, 205 E. 42 St , N. Y. 17.

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P. A. or ASSISTANT - Production or Non-Production. Eleven years with recent emplayer in automotive industry. Experienced in expediting planning and control. Guarantee better than average performance. Box 1129, PURCHASING, 205 E. 42 St., N. Y. 17.

#### MACHINERY FOR SALE

Moline - 12 spindle Rail Drill, "Hole Hog", 10' 0" long, 5" Centers. Excellent Condition.

GRAND IRON WORKS INC.

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#### **NEW BRONZE STRIP**

For forming High Grade Automotive Bushings, #610 Phosphorous Bronze strip, 100 ft. coils, 1" wide x .062-.064 and 1½" wide x .062-.064. A good buy for greater saving. Boxed ready for shipment. State your require-

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Discount of 10% for 12 consecutive displayed insertions. Undisplayed (want-ad style), minimum charge 4 lines, prepaid. Figure forty-two letter spaces (five average words) to a line. Add one line for box number address; replies forwarded without charge.

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# CLASSIFIED SECTION



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MID-WEST SCREW PRODUCTS CO. 3661 Park Ave. St. Louis 10, Mo.



# FOR SALE

General Electric induction motor, Form K, 200 HP., 3 phase, 60 cycle; 2200 volt, 720 RPM, 40° C continuous, Serial #1420866.

General Electric starting com pensator Form B3, type NR-2728, Serial #1086582. Voltage: primary 2080/2300, secondary 832/1768 and 1920/1955.

General Electric oil circuit breaker type FP, style 55902A. All to be sold as one unit.

BOX 1135, PURCHASING,

205 E. 42nd St. New York 17, N. Y

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6,300 lbs. .018 x 5¾ x 8/10' C.R. Soft Steel 20,000 lbs. .018 x 7% x Cls. C.R. Soft Steel 9,300 lbs. .018 x 5¾ x Cls. C.R. Soft Steel 8,000 lbs. .016 x 1¼ x Cls. C.R. Soft Steel 8,000 lbs. .016 x 1¼ x Cls. C.R. .04 Hard 4,500 lbs. .025 x 1¾ x 8° C.R. Soft Steel 35,000 lbs. 20 ga. 1¾ x 6/10' C. R. Soft Steel 11,175 lbs. .040 x 1¼ x 78" C.R. D.S. Steel 10,000 lbs. .093 x 1¼ x 10' C.R. Soft Steel 11,000 lbs. .093 x 1¼ x 10' C.R. Soft Steel 10,000 lbs. .109 x 4½ x 8/10' C.R. Soft Steel 10,000 lbs. .½ x½ x 14 x 18' C.R. Hard Steel 150,000 lbs. .½ x½ x 138" Hot Rolled Bands, R.E. 10,000 lbs. .074 x 3¾" x 35" Hot Rolled P& 0 25,000 lbs. .081 x 9¾ x 132" S2\$1/2 Hard ALUMINUM 25,000 lbs. .011 x 24½ x 30¼ TIN MILL BLACK PLATE

SEABOARD STEEL CO., INC.

New Haven

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Gang Slitter 27" wide with separate unit of 42" rewinder — both motor-driven with motors — complete set of knives and spacers.

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THE PURDY COMPANY

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785 pcs. 10 ft. long 173 pcs. 8 ft. long 150 pcs. 2 to 6 ft. long

Griswold Mfg. Company, Erie, Pa.

# FOR SALE

15 Ton-1 7/16" CS 1020 Shafting-18 to 20' Lengths (High Precision-pol-

ished & ground) 6 Tan-2 3/16" CF Shafting-20' Lengths

(1045 Carbon) 10 Ton-3" x 21/2" x 5/16" HR 35 Carbon Angles

3 Ton-1/4" x 2" x 16' HR 40-50 Carbon Flats

ALL NEW MATERIAL IMMEDIATE DELIVERY

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1244 East 73rd St.

Chicago, III.

# **SCREW MACHINE PRODUCTS**



1913-1947



Each Year Adds a Little More to What We Know about Screw Machine Products.

Check up with us

We may be able to show you a Rea! Saving on Parts — Up to 2½" Dia.—In

STEEL-BRASS ALUMINUM

### DISON MANUFACTURING CO.

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Offices: New York and Philadelphia



All blade finishes now black except Molders' Shovels, which may be furnished with either face or back polished. Say

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To THESE

GOOD BUYS in SHOVELS

Get acquainted — right now — with Ingersoll shovels. The *only* shovels, spades and scoops made of Tem-Cross Tillage Steel — with blade edges GUARANTEED NOT TO SPLIT. GUARANTEED NOT TO SPLIT.

Electrically heat-treated for springy ruggedness. Smooth polished hardwood handles. Specify Ingersoll — "A Borg-Warner Product" — for all your shovel needs.

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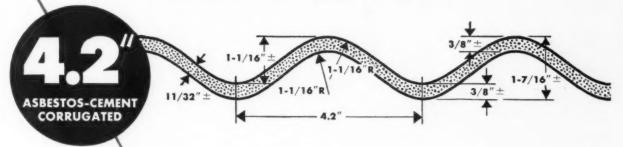
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# BASSICK'S "AIRLINER" CASTER

For modern materials handling



United Air Lines moves loads faster, safer and with longer life to baggage carts, commissary trucks, disposal carts, etc., on Bassick "Airliner" Casters.



Close-up of the "Airliner" showing shock-absorbing coil spring —"floating-hub" mounting and special "Floatread" wheel.



United and several other airlines have approved the Bassick "Airliner" as standard equipment.

Exhibiting remarkable ability to protect loads from jars and shocks, eliminate shimmy and withstand high airport speeds is the Bassick "Airliner" (above), unique shock-absorbing caster. The "Airliner" employs a patented "floating-hub" principle of wheel springing which keeps the wheel in contact with the ground at all times. The "Floatread" tire is semi-pneumatic with a special tread designed for maximum flotation.

"Airliner" casters represent another engineering achievement by the world's largest caster manufacturers. Bassick "Floating-Hub" casters are being widely used in industry for faster, easier, shockless materials handling. For further information, write: THE BASSICK COMPANY, Bridgeport 2, Conn., Division of the Stewart-Warner Corporation. Canadian Division: Stewart-Warner-Alemite Corporation, Ltd., Belleville, Ont.

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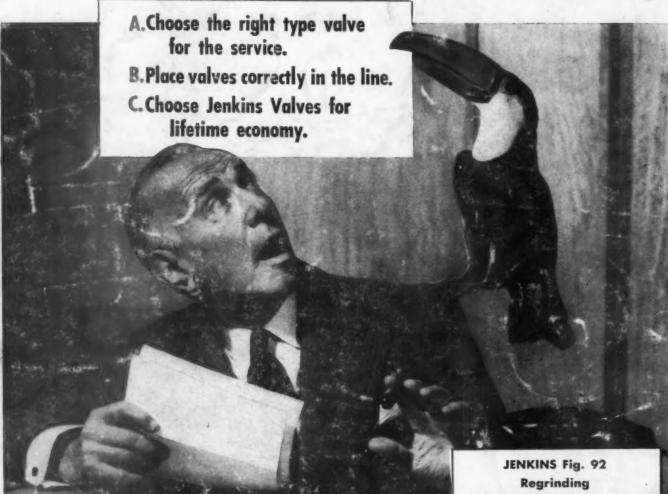


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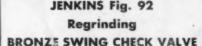


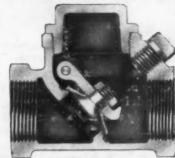
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